

# Manufacturers Record

Exponent of America



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Baltimore, Md.  
JANUARY 6, 1927

## Build More and Greater Highways.

With over 22,000,000 automobiles and motortrucks operating in this country, representing an annual expenditure for purchase and maintenance of over \$15,000,000,000, and with the certainty that automobile traffic and motorbus transportation will continue to increase to an indefinite extent, the need of more and broader and more substantial highways is becoming every day more apparent.

Highways built five or ten years ago are in many cases wholly inadequate to the needs of the present. Few people then realized the number of automobiles for pleasure and for business that would be in use by this time, and probably none realized how many motorbuses and motortrucks would be running at high speed and carrying heavy loads.

None but the most substantial highways can possibly stand the pounding of these enormous motortrucks and motorbuses at the present time, and their use is expanding with remarkable rapidity. New motorbus lines are being established almost daily. Motortrucks are carrying more and more freight on long hauls as well as on short ones.

At the same time the railroads are crowded to the limit of their capacity with existing facilities, and it will take all the ingenuity and all the capital that can be secured by railroad managers to increase railroad facilities to a sufficient extent to handle the growing railroad traffic of the country. Without the motorbus, the motortruck and the automobile the railroads would be hopelessly swamped, broken down physically, and that would soon mean broken down financially.

However great the cost may be of building improved highways wide enough to meet increasing traffic, solid enough to stand the wear and tear of heavy trucks and buses, this country must go ahead with the work on a larger scale than we have yet had. Instead of \$1,000,000,000 a year being spent for highway construction, the amount must be doubled, and that right soon. If we can spend more than \$15,000,000,000 a year to purchase and maintain automobiles and motortrucks, we can certainly spend \$2,000,000,000 a year to provide the highways over which they are to run.

Here and there is to be found an engineer broad enough in his views to realize the supreme necessity of more highways, broader highways, firmer highways and special highways constructed between important cities for high-speed automobiles and motorbuses and motortrucks. The people at large, however, do not seem to have fully realized this. Many of the accidents are due to overcrowding of the present highways. In 1925 deaths from accidents in which motor vehicles were involved reached the appalling total of 26,627. The cost in life is too great. This frightful toll must be lessened.

Public officials who fail to recognize the importance of this situation and, therefore, do not press with sufficient eagerness for the building of new highways, will to some moral extent at least be responsible for many of the deaths and accidents which now occur on overcrowded highways.

**This Is Our Annual Highway Review Number.**



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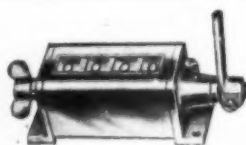
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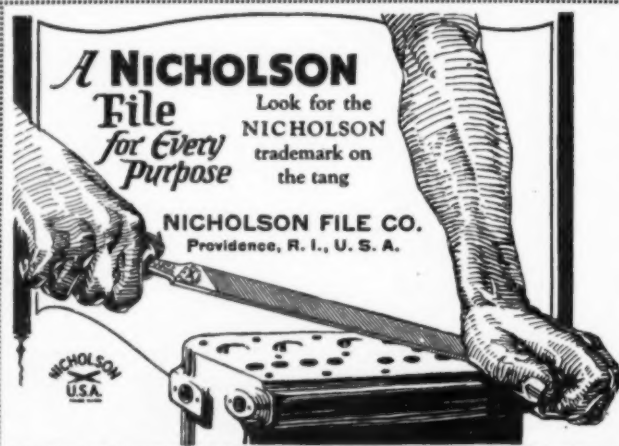
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# Manufacturers Record

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## An Indefensible Invasion by Congress of States' Rights.

THREE States, Florida, Alabama and Nevada, impose no income tax on estates located within their borders. The Federal Government, apparently in an effort to coerce these States into enacting income-tax legislation, remits 80 per cent of the Federal inheritance taxes collected in the 45 States that impose inheritance taxes, while collecting the full amount of the tax from estates in the three States that do not impose the inheritance tax. Hon. Lawrence Y. Sherman, a lawyer, of Daytona Beach, Fla., but for many years a member of the United States Senate, has prepared a brief to be used by the State of Florida in a suit to put an end to this discrimination. "If 80 per cent discrimination is Constitutional, 100 per cent is Constitutional," says Mr. Sherman. He rightly argues that if such a principle of discrimination is established the pernicious effect will be to invite Congress "to invade and ultimately to destroy the reserved powers of the States expressly retained under Amendment V and the general canon of Constitutional construction that our Federal Government is one of enumerated powers. \* \* \*

If local real and personal property tax were allowed as a deduction in Georgia and denied in Florida, or a credit of \$1500 allowed in Tennessee as a personal exemption for a single man and denied in Florida, it would not be uniform. Congress might base such discrimination on the difference in the nature of property taxes in the two States or the marriage and divorce laws or a bachelor tax in one and not the other State. A discrimination that resulted in making a Federal taxpayer pay more or less in one State than another, because of some law enacted or not enacted under a State's reserved powers, violates the rule of uniformity.

Such a power of discrimination places in the hands of Congress a powerful engine to drive through every reserved power of the State. No legislative instrument is so potent as a discriminatory tax power wielded against the diverse revenue systems of the several States.

Mr. Sherman enumerates a number of powers essentially sovereign in character, carefully reserved to the States by the Constitution. Some of them are the levy of State income tax, State inheritance or succession tax, child labor and women's labor laws. To deny to the States complete discretion in all details of such legislation is, he argues, to deny these sovereign powers themselves. A great variety of economic and social questions are constantly arising in the exercise of these powers, as, for example, municipal ownership and operation of certain enterprises; whether the State shall advance the boundary lines of its public undertakings, by taking over private occupations; whether the State shall resolve its government into a pure democracy, abolishing its legislature by means of the initiative and referendum, and

its executive and judicial departments by the recall of officers or of judicial decisions.

On all such questions, he points out, the voters in the respective States are the final authority. The Federal Government has nothing to do with them. It cannot properly enact any legislation designed to influence individual States one way or the other in the exercise of their unquestioned prerogatives. To do so establishes a precedent which, if followed, leads inevitably to the final complete dissolution of Statehood.

To use Mr. Sherman's illustration, suppose Congress should provide that in States that impose a State income tax, such as Wisconsin, North Dakota, Oregon and New York, such a tax should be so credited as to abate 80 per cent or entirely to obliterate the Federal income tax, would this be a uniform excise tax as prescribed by the Constitution? Could not the Federal Government reply to any complaining State that all it need do is to impose a State income tax on its citizens and thereby qualify for reduction of, or complete exemption from, the Federal income tax? Could not a like reply be made regarding a severance tax on natural resources? In a word, would not the adoption of such a principle enable the Federal Government to dictate policies of the individual States which are now, and should remain, wholly within the control of the State? Or to put the same thing a little differently, could not the Federal Government say to any State, "Now, be a good boy and you won't be punished?" This principle once established, a similar provision in future revenue laws could "coerce every State into levying an income tax, a single tax, a capital tax, a vehicle tax, a window tax, a cigarette tax, a franchise tax or any one or all of a thousand subjects lying within the reserved powers of the States."

Discriminatory legislation was tried under the Act of February 24, 1919, imposing a tax of 10 per cent on the net profits of any occupation employing child labor. The Supreme Court of the United States held it invalid as an invasion of the sovereignty of the State. The 10 per cent tax was called a penalty to "coerce the people of a State to act as Congress wishes them to act in respect of a matter completely the business of a State government under the Federal Constitution. \* \* \*

"The insidious power concealed in Section 301, when its principle is once established, arms Congress for a successful invasion of not only the States' reserved powers of local taxation, but an attack on the reserved powers covering the whole domain of the State's economic and social framework of domestic affairs. That power, once lodged in Congress by judicial decision, opens the gateway. Thereafter the States are not sheltered by the great Constitutional headlands

reared by the Fifth and Tenth amendments. In the place of those foundation stones hewed by the sturdy strokes of our ancestors are substituted the shifting sands of Congressional discretion that ebb and flow with the caprice and vacillating public opinion of transient multitudes. The potent mischief inherent in Section 301 is too apparent and revolutionary to find a place in the Constitutional powers of Congress in our dual system of State and national governments."

#### MOVEMENT OF POPULATION OUT OF CONGESTED AREAS OF BIG CITIES.

**C**ITIES continue to grow at a rapid rate and farm population is steadily decreasing, although not all farmers move into cities, even though they are counted among the urban population. For several years there has been a pronounced movement of people out of congested centers of great cities into suburban districts. Of course, the greatest contributing factors in this shift in population have been the automobile and good roads, which have given easy, quick and timely transportation at comparatively small cost. Around every large city suburban developments have sprung up mushroomlike, showing that thousands of city dwellers who formerly lived in the more congested parts of the city have moved out where they could have a small home and a garage housing the family automobile. Excluding, of course, expensive city subdivisions, most of this property, whether individually owned or rented, furnishes living quarters at less cost than similar housing conditions in the city.

Another factor to be considered is the tendency of industry to locate plants in the smaller towns of the country, as well as in the outlying districts of the large cities; all of this forecasts the beginning of the movement of population not back to the country, perhaps, but at least away from the city into surrounding country districts. Then, too, it is predicted that before many years the small-town store will regain some of its business, which it lost when the automobile and good roads led its trade away to the city store. Traffic congestion has become so great in the shopping districts of the larger cities that the stores in those areas in some cases are moving out into sections where they can offer parking space, for it has been estimated that for many of these stores 50 per cent of their trade is done by automobile customers. Traffic interference with the business of these merchants has been reported as high as 20 per cent. Large department stores in several cities have built, or are preparing to build, out beyond the congested area, in order to secure more room for their automobile patronage.

Another movement of population away from the city is being predicted which has little in common with the suburban lot development. This movement will result from the establishment of self-supporting homes on land for city workers, factory employes or clerks. The subject has been under discussion by some members of the National Association of Real Estate Boards. The idea is for factory or other workers to buy far enough away from the city, where farm land values have not become prohibitive, to secure an acre of land, or a small acreage, build a home, keep a cow, raise some chickens, have a few fruit trees and a small garden. The advocates of this movement believe that the workers will thus be able to secure a home in the country at comparatively small cost and that it should be almost self-supporting. Transportation to and from work will be taken care of by the use of low-cost motor cars or motorbus service, for in these days good roads and the automobile make a home located 10 miles out practically within the city. These are some of the advantages which real estate leaders are pointing out to city workers, and perhaps it may help to solve the problem of city living conditions in the future.

#### ARTICLES ON MANY PHASES OF HIGHWAY BUILDING IN THIS AND FUTURE ISSUES OF THE MANUFACTURERS RECORD.

**M**ORE than 40 pages of this issue of the MANUFACTURERS RECORD are devoted to reviewing outstanding developments in highway construction and motor transportation throughout the country, covering in particular the 16 Southern States. The country's leading highway engineers, road builders, machinery, equipment and materials manufacturers and students in general of highway problems have contributed articles and information for this survey—the most comprehensive yet presented, we believe, on the country's highways developments and problems. It covers many phases of highway building and the use that is being made of improved roads. Moreover, it gives some idea of the character of articles published from week to week in the regular issues of the MANUFACTURERS RECORD on the South's progress in road construction and the growth and expansion of the motor bus and truck industry.

For many years toll roads and toll bridges were built in great numbers. With the extensive use of motor vehicles, highway building on a big scale was inaugurated, and districts, counties and States financed road and bridge work largely through public funds, eliminating the need for charging tolls against individual vehicle operators. Recently there has been a return to former methods of financing large and important bridges, and it is generally predicted that super-highways will in the near future be financed by private enterprise. In an early issue of the MANUFACTURERS RECORD the subject of bridge building will be covered in a comprehensive manner, featuring the many important structures built recently, now building and projected by private enterprise. The bridge-building programs of the various Southern States will be reviewed at length, giving particulars concerning the various types and kinds of important bridges completed in the South recently, now under construction and proposed. This article will contain illustrations of many important bridges completed recently in the South.

Motorbus transportation is keeping pace with highway building. In many sections as fast as new roads are completed permits are requested by motorbus line operators for authority to install bus service. Every week announcements are published in the construction news columns of the MANUFACTURERS RECORD of the inauguration of new bus-line schedules, of the purchase of additional equipment by established lines and of the building of passenger terminals. Throughout the South this new form of transportation is developing with amazing rapidity. As a result of the operation of these lines rural residents are no longer isolated from cities and towns, trade areas are being expanded and an invaluable service is rendered for bettering social conditions and increasing property values, and whole sections are taking on new life. Motorbus transportation and what it is doing for Southern communities and cities will be discussed quite fully in the MANUFACTURERS RECORD in the near future.

Other countries, having seen the tremendous influence the building of highways has meant for the general prosperity and advancement of this country, are being stimulated to undertaking highway construction on a big scale. This is particularly true of South American countries and of Mexico and Cuba. And with the launching of ambitious programs for road and bridge construction there is a growing demand for American engineering skill, money and road-building materials and machinery. What Mexico and Cuba are doing along these lines will be described in subsequent issues of the MANUFACTURERS RECORD.



# To Make the South Known to Investors and Manufacturers Throughout the Country.

**T**HE Blue Book of Southern Progress, issued by the MANUFACTURERS RECORD, has heretofore been distributed freely at our expense among the cotton-mill interests of New England. To the facts which these manufacturers have thus been able to learn in this way much of the southward trend of the textile industry is, we think, unquestionably due. And now that the New England cotton-mill people have become so thoroughly aroused as to the opportunities in the South and are investing so heavily in the building of cotton mills and bleacheries, the distribution of the Blue Book of this year will be broadened and other fields will be utilized to turn the thought of the people southward.

The Investment Bankers Association of America represents the leading banking interests of America interested in the placing of securities. In order that these men may become more and more familiar with what the South has and what it is doing, a copy of the Blue Book of Southern Progress for 1927, now in course of preparation, will be mailed with our compliments and a letter accompanying it to every member of that association.

In addition to that distribution, which will be invaluable to the South, many thousands of copies will be sent in the same way and with a somewhat similar letter to leading manufacturers in all parts of the North and West. Accompanying this distribution, made at the expense of the MANUFACTURERS RECORD, will be a letter from the editor inviting the attention of those who receive the Blue Book to the comprehensive presentation of the story of the South and its future.

Every day witnesses an increasing interest on the part of the people of the whole country in the South as the coming center of business development. To crystallize that sentiment and to concentrate it upon the South is the work which, as publishers of the Blue Book of Southern Progress, will be our aim for the 1927 edition.

We are going to give to that edition an unusual circulation in reaching these investment bankers and in reaching many thousands of manufacturers; and this is in addition to all the sales which will be made by single copies and by bulk orders. Many of the leading business concerns of the South buy, in some cases, hundreds of copies, and in some instances thousands of copies, for distribution to their customers or to prospective clients. The distribution to manufacturers and investment bankers to which we have referred will be in addition to these heavy individual orders, and will be made at the expense of this company.

With such a distribution as the 1927 edition of the Blue Book will have, it will afford an exceptional opportunity for the South through its commercial organizations, its business concerns and its transportation companies to draw the specific attention of Northern and Western people to the resources of individual communities and of transportation and business interests. We cannot too strongly stress the importance of this year's Blue Book as an advertising medium for the whole South, for cities and States and for individual business interests, and for the transportation companies that want to concentrate the thought of the whole country upon the resources and progress of the South.

We are able to guarantee that though former editions have brought forth unstinted praise from subscribers to that publication, this year's edition will be the best we have ever issued.

It should be in every school in the South, in every counting room in the South, in every private home; and thousands of copies should be mailed by Southern business interests to their correspondents in every section, for the purpose of letting them know exactly what is being done in the utilization of the unmatched natural advantages of the South.

## BRING THE NATIONAL FOREIGN TRADE COUNCIL TO BALTIMORE.

**T**HE next annual meeting of the National Foreign Trade Council will be held in Detroit in May, and the general understanding is that the 1928 meeting will be scheduled for Houston, Texas, a very wise decision. Detroit, a great outstanding port in the North, and Houston, a tremendously rapidly growing city in the far South, will meet every requirement that is needed by the National Foreign Trade Council in its annual meetings to arouse the country to every question bearing on foreign trade.

It has been suggested that Baltimore should begin to make a fight for the convention of 1929. There are many reasons why Baltimore should make an effort for this convention. It has one of the best equipped ports of the United States. It ranks high in tonnage. It has a foreign trade that touches all the world. It has been a commercial city of importance since the days long past when Baltimore clipper-built ships sailed the Seven Seas of the world and carried Baltimore's flag to all the ports of Europe and Asia. Generation after generation its people have been interested in foreign trade and now, as one of the greatest steel centers in the world, having probably the largest combined iron and steel and shipbuilding plant under one management in the world, it is becoming a dominant factor in shipbuilding and in the utilization of these ships for foreign trade. Great as is the Sparrows Point plant of the Bethlehem Steel Company, Mr. Schwab, the chairman, in a Baltimore address, recently promised to make it the greatest single steel plant in all the world.

Viewed from every standpoint, therefore, it is extremely appropriate that Baltimore should secure the National Foreign Trade Council convention for 1929, but to do so the business men of the city must begin an immediate campaign and be prepared to go to Detroit in sufficient numbers and force to make Baltimore the outstanding candidate for the convention. Baltimore cannot antagonize Houston, for if it did so it would lose out completely, but it can make a great fight for the 1929 convention.

## ANOTHER SIDE OF THE COTTON SITUATION.

**A** SAN ANTONIO woman subscriber to the MANUFACTURERS RECORD sends an editorial clipping from the San Antonio Express, which she says "contains some ideas well worth considering at the present time when there is so much dissatisfaction and unrest in the cotton world. Coming from the heart of the cotton district of Texas, it has its message and I hope will be received by your valuable publication."

The clipping sent by this good woman, who does not desire that her name should be made known, is as follows:

"The pessimist sees only the low price of cotton, and the optimist wants to see only what cotton will be worth when

the price rises, as it will within the next few weeks. But why not take a middle view and look at actualities?

"Twelve counties in San Antonio's trade territory up to November 1 had ginned 536,857 bales. On the basis of 11 cents a pound this cotton is worth \$29,527,000. Last year these same counties ginned 213,844 bales, worth—at this time in 1925—slightly over 20 cents a pound, or around \$21,300,000. The bigger crop at the lower price this year is worth \$8,200,000 more than last year's crop. There is \$8,200,000 more wealth in San Antonio's neighboring buying territory than appeared in November, 1925. And that is the fact worth looking at.

"It is true, as often is pointed out, that a smaller crop brings a higher price, but it is not so often pointed out that a smaller crop always is accompanied by total, or almost total, failures in many sections whose producers get nothing. The money from the \$29,527,000 worth of cotton raised in the 12 counties near San Antonio this season is divided among many times more people than the \$21,300,000 reached a year ago.

"High wages for the few at the expense of idleness for the many does not bring prosperity. Even the lowest of wages divided among the greatest number is better than inequality of division. And the general distribution of cotton money in every southwest Texas farming community this year is preferable to alternate sections of prosperity and crop failure. That is the real silver lining."

### THE DECREASED CROP VALUES OF 1926.

ACCORDING to the Government's December crop estimates of production and value, based on December 1 prices, the aggregate value of over 50 crops produced in the United States in 1926 was \$7,802,114,000. This is a decrease of \$1,147,207,000, or 12.8 per cent, compared with 1925. More than \$581,000,000 of this decline in crop value in 1926 was in cotton. However, the South's three principal grain crops of corn, wheat and oats, with a total production of 1,299,933,000 bushels, valued at \$959,258,000, showed an increase in aggregate production of 358,891,000 bushels and a gain in value over 1925 of \$117,000,000. While the South has an increase in both production and value of these crops in 1926 compared with 1925, the rest of the country outside of the South reported a decrease. The combined production in the rest of the country of these three crops in 1926 amounted to 3,431,142,000 bushels, or 708,756,000 bushels less than was produced in 1925. The value of these crops in 1926 is estimated at \$2,240,749,000, which is \$400,000,000 less than was received by the rest of the country outside of the South for these three crops in 1925. Therefore, it will be seen that while the South's cotton crop will bring in a much smaller revenue in 1926 than in the previous year, this section has greatly increased its principal grain output, while at the same time the rest of the country is reporting a smaller grain crop.

With the much larger production of practically all crops in the South in 1926 compared with 1925, should farm prices advance Southern farmers who have been able to hold on to their cotton will be in a much stronger position than those in other sections of the country, and it must be remembered also that many cotton farmers in the South received more than the 10.9 cents per pound for their staple, the average price on which the December 1 cotton values were based.

Another point to remember is that though the South in 1926 harvested 47,000,000 acres of cotton, the largest in the country's history, it also harvested over 56,000,000 acres of corn, wheat and oats, and, in fact, cotton represents but 35 per cent of the total crop acreage of the South.

### LET THE SOUTHERN TEXTILE INDUSTRY AVOID THIS FATAL ERROR.

THE following paragraph from a cover-page editorial of the American Wool and Cotton Reporter some weeks ago gives point to a discussion at this time of the enervating effect upon many New England cotton mills of absentee ownership:

"One of the largest New England textile manufacturing corporations has voted to liquidate. It is a rich mill with a fine equipment, but the class of goods it is making is undesirable. The property can be liquidated at the present time and the stockholders will get more than the going market for their shares. But the management is showing the white feather in suggesting liquidation. Something is owed to the operatives in the mill as well as to the stockholders."

About the time this editorial appeared the MANUFACTURERS RECORD received a letter from the president of a Southern hosiery mill in which the writer lays the blame for the decline of New England's cotton textile industry, not upon difference in wages, in hours, in taxes or in distance from the cotton fields, but upon the tendency of owners, by inheritance, to leave the operation of their mills to hired managers. Says this mill man:

"Personally, I think that the question of absentee ownership is paramount and that these same mills that move from the North to the South will soon or late have the same trouble that they had in the North and East. Originally, nearly all of these mills in the East were very successful. They paid big dividends and were profitable to their owners. When these mills were started they were managed by owners who lived adjacent to the mills and were in close touch with all of the details of their business. The second generation who inherited their properties from their parents moved into Boston, New York, Providence and other metropolitan centers and left the management of these mills to their agents. It is a natural thing to suppose that the individual is going to watch his own property with a greater degree of efficiency than his employed manager. As a consequence these mills have not, in all cases, been as closely supervised and as efficiently managed as they were under original ownership, and very naturally their owners look for a reason. They look South and see many prosperous mills still under the management of the original owners who are living adjacent to their mills and managing their properties themselves. Unless we are very careful this same evil of absentee ownership is liable to repeat itself in the South and with the same numbing effect as it has had in the East.

"I realize that we have many advantages here in the South over the East for textile manufacture, but they are not insurmountable to the Eastern manufacturer, and I venture to say that the same old hard-headed, Scotch-Irish and English pioneers in the textile business in New England would again make a success of their enterprises if they were back here on earth and personally managing them. We have the same Scotch-Irish blood here in the Piedmont section of the South and are just repeating the first phases of the success of the first generation of the New England textile manufacturers. If we are not careful we are likely to follow the example of the second and third generation and make a failure on account of absentee ownership. I have felt for a good many years that the personal equation was a great factor in the upbuilding of our mills here."

The Southern mill men have been warned by New England's experience with foreign labor and are determined to keep similar help out of their mills. Let them be likewise warned by New England's experience with absentee ownership. It is recognized by many New England mill men as one of the outstanding factors responsible for the tragic decline of a great industry.

ACREAGE, PRODUCTION AND VALUE OF FIVE PRINCIPAL SOUTHERN CROPS.

	Acreage		Production		Value	
	1925	1926	1925	1926	1925	1926
Corn (bushels) .....	37,868,000	37,582,000	710,672,000	895,111,000	\$621,875,000	\$639,096,000
Wheat (bushels) .....	8,288,000	10,175,000	91,785,000	174,942,000	140,953,000	217,190,000
Oats (bushels) .....	6,626,000	8,110,000	138,585,000	229,880,000	79,351,000	102,972,000
Cotton (bales) .....	46,053,000	47,653,000	16,103,679	18,618,000	1,597,670,000	1,016,346,000
Tobacco (pounds) .....	1,571,000	1,511,400	1,153,283,000	1,152,418,000	216,094,000	211,726,000



## THE UNITED STATES POSTOFFICE WAS ESTABLISHED FOR SERVICE, NOT FOR PROFIT.

FROM all indications there is no possibility that a decrease in the postal rates can be secured at this session of Congress. The last compromise plan, sponsored by Senator Moses, chairman of the Joint Congressional Postal Committee, was blocked. It was suggested that the Postoffice Department would not object to the 1921 rates being used as a basis for the compromise, but that Senator Moses' tentative plan for reduction in rates to approximate those prevailing in 1920—as compared with the McKellar bill which would completely restore the 1920 schedule—was not acceptable to the department. In discussing this question, an editorial in the Editor and Publisher, which represents the daily newspapers of the country, under the heading "The Amazing Postal Situation," outlines the following pertinent facts:

"Postmaster General Harry S. New continues his amazing obstruction of a sensible and equitable adjustment of second-class postal rates. When all the technical dust of the squabble at Washington is blown away, the head of the postal system is seen standing for his original object—make the postal institution a solvent business rather than the public service that the Postoffice has stood for since the days of Ben Franklin. We believe that restoration of 1920 postal rates means more to the average man, woman and child in this country than does the political feat of showing the Postoffice as a 'paying' branch of government. Second-class postal service has been well-nigh destroyed for the great newspapers and magazines, able to find other more economical means of distribution. The hardship falls most heavily upon those least able to bear it. To Editor and Publisher it seems incredible that the Congress will permit this injustice to operate another year. Every publisher who is faithful to the high principle of the second-class postal privileges owes it to himself and his community to denounce the implication that this fight is for a Government 'subsidy,' and demonstrate to Congress that the safety and progress of the nation demand that public information circulate through postal channels on terms within the reach of the poorest citizens."

The MANUFACTURERS RECORD is convinced that no progress will be made in changing the present zone system of postal rates until the whole postal situation is thoroughly studied by some recognized analytical mind who, going back to the beginning and coming up to the present time, will thus be able to bring out the real heart and purpose of the Government in giving its citizens the postal service which would place no restriction upon the interchange of journalistic opinions and discussions between readers in different sections of the country.

As a result of this study the MANUFACTURERS RECORD believes the facts developed would convince Congress that the Postoffice should give newspapers and publications unhindered movement from point to point throughout the entire country, re-establishing the purpose of the Government in drawing citizens together and making them and their problems better known to each other. This can only be done by acting on the principle that each citizen is entitled to precise, exact, equal treatment, and the resident of the Pacific Coast should not be required to pay more for getting a publication from the East than the citizen in the East is required to pay for a publication from the West. In the two-cent letter postal rate we do not differentiate between the man who lives next door and the man who lives in the farthest corner of our country. Then why should we penalize the man who lives at a distant point because he is endeavoring to learn through newspapers and periodicals of what other sections are doing in meeting problems which affect the country as a whole?

The MANUFACTURERS RECORD is becoming convinced that a

study of this kind will develop the fact that the present zone system will be found to be unconstitutional, for it is against the best interests of the Government and the country, and should be abolished. The Postoffice Department of the United States should be run for the service of the people and not for profit.

If President Coolidge wants to make effective in a complete, practical way his recent statement about the unfettered circulation of the press, he will have to denounce the present system of zone rates on newspapers, business papers, magazines and other similar publications as did Woodrow Wilson when, as Governor of New Jersey, he sensed the danger of introducing the zone system controlling the distribution of newspapers when that proposal was first brought before the attention of the public, and said:

"It must be that those who are proposing this change of rates do not comprehend the effect it would have. A tax upon the business of the more widely circulated magazines and periodicals would be a tax upon their means of living and performing their functions.

"They obtain their circulation by their direct appeal to the popular thought. Their circulation attracts advertisers. Their advertisements enable them to pay their writers and to enlarge their enterprise and influence.

"This proposed new postal rate would be a direct tax, and a very serious one, upon the formation and expression of opinion—its more deliberate formation and expression just at a time when opinion is concerning itself actively and effectively with the deepest problems of our politics and our social life.

"To make such a change now, whatever its intentions in the minds of those who propose it, would be to attack and embarrass the free processes of opinion. Surely sober second thought will prevent any such mischievous blunder."

We hope President Coolidge will support the removal of this zone handicap, so that his thought may be carried out that the distribution of the press should flow evenly throughout the entire country, from the Atlantic Coast to the Pacific, and from Canada to the Gulf, on a uniform, equal basis to all citizens without the extraordinary zone device of super-taxation.

## LEADING CLUBWOMEN TO DISCUSS WEARING COTTON CLOTHES IN PLACE OF SILK.

THE clubwomen of De Land, Fla., are going to have a debate in regard to the wearing of more cotton clothes in place of silk clothes. Mrs. J. E. Taylor, 327 West Minnesota avenue, De Land, Fla., in talking over the matter with the editor of the MANUFACTURERS RECORD said she was raised in a cotton patch, but not until this thought was brought to her attention did she realize that none of the garments she was wearing were of cotton material. She is seeking from cotton manufacturers and others all the information she can secure in regard to cotton garments and is anxious to be able to exhibit some cotton dresses at the meeting of the clubwomen about the first of February, when the subject will be up for discussion.

## GEORGIA SLANDERED.

NO State in the South has made a greater progress in diversification of its crops than Georgia. It is no longer dependent on cotton, and that fact has been reiterated over and over again a thousand times. And yet the Philadelphia Ledger in a recent editorial said:

"Georgia, 'a one-crop State,' has been forced to return to the ancient system of bartering her surplus cotton for the necessities of life."

What an infinite pity that a newspaper that claims some degree of intelligence should make so stupendous a blunder!

### A QUESTION FOR GOVERNOR PEAY OF TENNESSEE.

**W**HEN Miami was visited by a severe storm, Governor Peay of Tennessee attributed it to a punishment by the Almighty for the alleged wickedness of Florida. As Governor Peay now witnesses the great loss of property, with thousands of people reported driven from their homes by the floods in the rivers of his State, will he hold the Almighty responsible for this disaster because of alleged wickedness of the people of his own State? We trust not, for surely Governor Peay has had time since the Florida storm to change his views on the subject of such disasters.

As the sympathy of the country went out to the South Florida sufferers, so will it go in unstinted measure to the sufferers from the overflowing rivers of Tennessee and of other States. These flood waters only serve to emphasize the need for reforestation and for storage reservoirs to hold back such rushing streams, and at the same time to create great hydro-electric powers. If this present flood condition serves to drive home this fact to Congress and compel prompt action, it will in the end be worth far more than the losses of the present.

### A MONSTROUS PROPOSITION.

**I**N a letter to members of the Congress, with a copy to the MANUFACTURERS RECORD, A. B. See, 52 Vesey street, New York city, thus warns of some of the evils which would develop through the creation of a Department of Education in the Federal Government, as proposed by some misguided enthusiasts. Says this letter:

"Pedagogues are clamoring for a new Cabinet officeholder to be known as 'Secretary of Education.' There is not the slightest reason for such an office. If the pedagogues could have all the money spent in the various ways for which they are scheming, there would be but little left for anything else. They are shameless in their disregard of the burden borne by the oppressed taxpayers.

"If we had a Secretary of Education, he would be supplied with an army of lackeys to be added to the vast number of officeholders who are now sapping the life of the nation. A speaker called attention to the fact that all the known gold in the world would barely pay the cost of government in our country for a single year.

"He also showed that before the Civil War there was but one person on the payroll of the taxpayers to every thousand engaged in business or industry; that at the time of Cleveland's Administration there was one to every hundred so engaged, while now our country is afflicted by having a person on the payroll of the taxpayers to every fifteen engaged in business or industry.

"It used to be said that every man in Germany went to work with a soldier on his back. If we keep on adding to the office-holding class, it will not be long before every man in this country will go to work bearing on his back the burden of an officeholder.

"All over our land should go up an earnest cry of the beleaguered taxpayers, beseeching the legislators not only not to add to their burden by creating new offices, but to bring the sadly needed relief by reducing the number of persons on the payroll of the taxpayers to one-quarter, if not one-tenth, of what it is now."

Mr. See has emphasized only the financial burden of this proposed agency on the harried American taxpayer. Heavy as this burden would be, it would be light in comparison with the other evils which, undoubtedly, would develop—the substitution of bureaucrats for parents in control of American childhood; Government invasion of the private home; standardization of American children; depriving American children of their God-given right to protection and training by their fathers and mothers; depriving parents of the God-given privilege and responsibility for training their

own children. These, too, form only a few items in an almost inexhaustible list of evils.

Mr. See has spoken with a moderation very difficult to exercise in discussion of this monstrous proposition.

### HAS THE EBBING TIDE IN NEW ENGLAND'S COTTON-TEXTILE INDUSTRY REACHED THE TURN?

**A** NUMBER of towns and cities in New England are reported to be contemplating lower taxes on corporations in an effort to retain the cotton mills still left to them, while at the same time comes word that in several mills the employees have voted to accept lower wages. Ware, Mass., is one of the towns mentioned. The decision of the Otis Company to liquidate its affairs, and thereby wipe out the main support of the town, was reported recently in the MANUFACTURERS RECORD. As a result of action taken by the citizens of Ware, the directors of the Otis Company have recommended that the stockholders defer their decision long enough to try operation on lower taxes and lower wages. From Palmer, Mass., and Greenville, N. H., come similar reports, while Lowell has elected a mayor on his promise to lower taxes in an effort to fend off further loss of taxpaying units. In New Bedford and Chicopee proposals for similar moves are being discussed.

High taxes, high wages and various forms of restrictive legislation and union regulation have been the main factors in driving tens of millions of dollars of cotton-mill money from New England to the South. While New England business men have long recognized the damaging factors, their employees, under the domination of selfish labor leaders, have stubbornly held to the belief that all talk of the true difficulties was merely propaganda inspired by a desire to escape just taxation and honest wages. But, apparently, the closing of mill after mill has finally carried its lesson to the minds of the suspicious, class-conscious, foreign labor of the section.

If the cases reported above indicate the beginning of a general tendency in New England to make life more livable for the competitors of Southern industries, it may result in a turn of the tide for the whole section. New England industries lack many of the advantages that Southern industries have and will always enjoy, but New England has the advantage of a great reservoir of trained labor, already developed industrial centers, with all that they mean in established trade channels, practices and managerial skill. If the people of the section have thoroughly learned their lesson and are ready to take seriously the effort to remove the obstacles to industry that they themselves have created, it may well follow that the industrial leaders will be able to overcome the natural handicaps imposed by climate and distance from raw materials. But the New England people will have to take their effort very seriously indeed, for their handicaps are many and great.

Any interpretation of great industrial trends from such signs as these must be made with many qualifications. It seems inevitable that sooner or later the steady flight of mills from that section would force a realization of the truth upon even the most suspicious, class-conscious of alien labor. Whether the realization has been sufficiently widespread to be really effective remains to be seen.

If New England can stem its ebbing tide, the whole country will feel the benefit. No section can long profit by draining off the industries from another. A prosperous New England will always be a great customer of the South, but with New England's industries moving to the South, the latter section will find it impossible to sell what the former wants but cannot buy. Let the South develop great industries of its own, and trade between the two sections will thrive.



# American Meddling in Nicaragua.

By COURTENAY DE KALB.

The seemingly tangled skein of Nicaraguan politics would soon lose the romantic characteristics that fit it for use in some new story of the O. Henry type were we to keep our hands off. Ever since we connived at a revolution financed by American capitalists to drive out Zelaya and install a creature who would do the bidding of "big business," we have officially meddled in Nicaraguan affairs, suffering loss of good-will throughout Latin America in consequence. The withdrawal of our marines from Managua some months ago produced a favorable reaction in our favor among the Latin Republics. It will be hard to persuade them again of our benevolence of purpose.

By our intervention in Nicaraguan politics we have made friends for Mexico all over Latin America, as the dispatches show. The Department of State is exceedingly anxious that we shall not call it "intervention." That is like the ladies who object to having right-thinking people call their playing bridge for money gambling. "But," they say, "we do not call it gambling." The Department of State does not call it intervention when it intervenes and interferes with de facto Governments. We hold no brief for either side. Indeed, we may not know all that might be known concerning the intricate meshes of Nicaraguan politics. It is not necessary to possess an intimate acquaintance with the details to comprehend that we have done a thing in Nicaragua that we would not dream of doing with any first-class Power, such, for example, as England or France or Italy. We would carefully observe the customary rules of international law in dealing with them. When we undertake to occupy territory, and by our sovereign will declare that certain areas are "neutral," who has exercised sovereignty over that territory? Is it not we who have done it? Was it Adolfo Diaz who did it? If it was done with his approval, were we not then acting as his agents, and were we not intervening for his benefit to the disadvantage of Sacasa? There are those who claim that Sacasa is rightfully entitled to succeed Solórzano, the President, who resigned under orders from Chamorro. Have we sent our Supreme Court down there to ascertain the facts in the light of the evidence? What right have we to assume to determine who is right and who is wrong in a foreign country? At a certain stage of affairs in Nicaragua (omitting to inquire how they came about), Adolfo Diaz was the de facto ruler of at least the plateau country of Nicaragua. We chose to recognize him, but that did not make us his ally.

Recognition is a procedure for the better exchange of communication between countries to facilitate commercial intercourse. It involves no responsibility on the part of the country giving recognition. We may tomorrow, in the face of changed facts of government, recognize a successor in authority. Leaving out of view for a moment the fact that Mexico chose to try to annoy us by recognizing Sacasa, it must be admitted that in international law Mexico was quite entitled to recognize him, because he did establish a Government that functioned in the Mosquito Coast of Nicaragua, and was gathering taxes. The people who paid those taxes were largely Americans. It was unfortunate, but it has always been understood that men in a foreign country are subject to the de facto Government. It is true that sometimes successive de facto Governments try to collect anew taxes once paid, but our nationals are then legally entitled to the protection of our Government if we have a treaty of amity and commerce that is properly drawn.

One will search in vain through the recognized treaties on international law to find authority for forcibly landing troops and changing the political status of a portion of a

foreign country. It would be to establish a dangerous precedent for our own security to pretend that it is justifiable. It is not inconceivable that dangerous riots might occur here at home, developing into proportions that could be deemed by the radicals a revolution. Suppose that the radicals of San Francisco should achieve such a thing, and that Japan should claim that the lives and property of her subjects were endangered, would not Japan, by the same argument, be justified in entering San Francisco with her warships and administering a zone of California, extending it later, as we have done under Admiral Latimer, so as to include other important cities? That is the new principle in international law that we are venturing to set up in Nicaragua. When we established "neutral zones" at Puerto Cabezas and Bluefields we were administering those zones. We were performing acts of sovereignty over them. We understand that the acts of Admiral Latimer were specifically authorized by the Commander-in-Chief of the Navy of the United States, which absolves the Secretary of State from responsibility for such legal nonsense as the dispatches from Washington have been trying to impress upon the people of the country. We had heard that the intelligence of the American people had suffered severely in recent years from several causes, but we did not believe it had sunk so low that we could be expected to accept the absurd explanations said to issue from "the White House spokesman" and from those venturing to speak for the Secretary of State. We like to believe that Secretary Kellogg possesses at least an elementary knowledge of international law.

Perhaps the most unfortunate statement that has emanated from Washington during this difficulty was that published in the New York Evening Post on December 29, and, in various phrases, presented by other papers, affirming that "Neither Secretary Kellogg nor President Coolidge \* \* \* believes American intervention under those circumstances constitutes a violation of traditional American policy." That "traditional American policy" is at the bottom of a great deal of the trouble in these recent years with Mexico and other Latin-American countries. It is the cause of the larger part of the fear of us entertained by our Latin neighbors. That policy is one that has led to the bombarding of cities by American naval ships, to the destruction of property and lives in foreign countries, to the violation of a treaty with Colombia that guaranteed her territorial integrity, to the support of a President in Nicaragua by force of our marines for some 14 years.

We know perfectly well that Great Britain would not have tolerated our dominance over any part of Canada in that manner. We are fully cognizant of the fact that if it had been possible to force us to arbitrate our right to hold foreign officials in office the case would have been decided against us, and that it would have been characterized as an infraction of the sovereignty of an independent member of the family of nations. In short, we know that it is not according to the generally accepted tenets of international law. It is just because we practice one brand of international law in our dealing with England and France and Italy and a wholly different set of principles in our dealings with Latin America that they are afraid of us. When we do that they cannot foresee what they may expect us to do next. Since "the traditional American policy" is not yet defined, but depends on the whims of Tafts, Wilsons and Coolidges, each with a different viewpoint, the only tradition that they are able to see is one of violation of their sovereignty. It is wholly indeterminate and is in no respect universal. It is subject

to the passions of what we call "democracy." It takes more than one country to make "international law."

Our "traditional" policy, which has cost us the friendship of all Latin America, is an imposition of our will upon them, and as long as they retain independence they will continue to distrust us until we rise to a higher ethical level and treat small nations exactly as we treat large nations and would wish to be treated by others. One policy for England and another for Mexico never will help to persuade Mexico of our good intentions toward her. As long as we persist in these evidences of our depreciation of the rights of nations because they are not powerful, just so long will we have difficulty in winning their favor and in making it safe and easy for our citizens to do business in those countries. In the name of these United States Admiral Latimer is exercising rule over certain portions of Nicaragua, but it is not the "Golden Rule."

### Increased Acreage to Winter Wheat.

The Agricultural Department estimates that the area sown last fall to winter wheat is 41,807,000 acres, 2,008,000 acres, or 5 per cent, more than the revised estimate of 39,799,000 acres sown in the fall of 1925. Nearly one-half of the increased acreage is in the South. The revised estimate of the sowings in the fall of 1924 was 38,848,000 acres.

Farmers in some of the States were prevented from sowing to winter wheat as many acres as were intended by rains, by drouth, and in one State by scarcity of seed and inability to buy it. On the other hand, the low prices for cotton have caused the conversion of some cotton acreage into winter wheat acreage. For nearly all of the States increased, or unchanged, acreage is estimated, decrease being confined to New Jersey, Pennsylvania, Ohio, Michigan, Wisconsin, Maryland and West Virginia. The area in wheat in the South is estimated at 11,431,000 acres, an increase of 1,091,000 acres, as compared with 10,340,000 acres planted in the fall of 1925.

### Three Southern States Produce \$1,000,000 of Barytes Annually.

In the article, "Development of the Non-Metallic Industries of the South," by Dr. A. F. Greaves-Walker, and published in the MANUFACTURERS RECORD of December 16, there was a typographical error which omitted one naught in giving the annual production value of barytes in the three States of Georgia, Tennessee and Missouri. The annual production of barytes in those three States is valued at \$1,000,000.

In calling our attention to this typographical error the Davis Foundry and Machine Works, for over forty years manufacturer of washing, screening and other machinery for handling barytes ores, states that the Rome and Cartersville districts of Georgia alone mine more than 150,000 tons of barytes a year.

### Plans Consolidation of Virginia Utilities.

Newport News, Va.—Plans have been completed for the consolidation of the Newport News and Hampton Railway, Gas and Electric Company of this city with the Virginia Public Service Company of Charlottesville. Consummation of these plans will complete the organization of a single operating unit of utilities in Virginia controlled by A. E. Fitkin & Co. of New York. The Virginia Public Service Company is a merger of the Alexandria Light and Power Company, Virginian Western Power Company, Northern Power Company and the Southside Virginia Power Company. With the addition of the Newport News Company it is stated that the Virginia Public Service Company has a property value of more than \$30,000,000.

### To Reconstruct Upper Tallassee Dam of Alabama Power Company, Raising Height to 57 Feet.

Birmingham, Ala., December 31—[Special.]—Upper Tallassee Dam, familiarly known as the Montgomery Dam, located on the Tallapoosa River, seven miles below the Martin Dam development, is to be converted into a major development by increasing its height from 36 feet to 57 feet and its capacity from 8500 to an initial installed capacity of 50,000 horsepower, according to an announcement by Thomas W. Martin, president of Alabama Power Company.

Provision will be made to install a third unit of 25,000 horsepower later if it is found desirable to do so. Work on the project is to begin early in 1927 and 1000 men will be employed on the job. Units to be installed will be the largest ever brought into the Southeast for a dam of such low head, the announcement stated. A construction camp will be located between the upper and lower Tallassee dams, which latter project is also owned by the Alabama Power Company. The lower Tallassee Dam will also be converted into a major development as soon as work on the upper project is completed, the same construction camp and force of 1000 men being employed for both projects.

An interesting engineering feature of reconstruction of these two dams is that the storage capacity of Lake Martin—60,000,000,000 cubic feet of water—will increase their primary capacity at a time when the Coosa River is at its lowest stage. During the low-water period, water from Lake Martin will be released through the Martin Dam turbines, and this same water will keep the turbines of the two Tallassee dams in more constant operation, performing a triple service at a time when the big generators on the Coosa River will be idle, or partially so, for lack of sufficient water.

Upper Tallassee Dam, which was the first hydro-electric plant of any consequence in Alabama, was constructed in 1896 by Henry C. Jones and other citizens of Montgomery. It was operated by the Montgomery Light and Water-Power Company until 1919, when it was partially washed away by floods of that year. When Alabama Power Company took over the holdings of the Montgomery company in 1923, the upper Tallassee project was included. It was immediately reconstructed and put back into commission by the new owners in 1924, but its capacity was not increased at the time.

In announcing the reconstruction of this power development, Mr. Martin called attention to the fact that work on the dam will begin at a most opportune time, when employment of labor in Alabama is usually at low ebb. Emphasis is also laid on the fact that purchase of necessary materials and supplies from Alabama producers, particularly cement, sand, gravel, steel and food supplies, should act as a stimulant to business generally in the State.

### Turkey Production a Big Revenue Producer for Southern Farmers.

The farmers of Texas annually ship about 1500 cars of turkeys on ice to Eastern markets, reports F. C. Quereau, assistant agricultural agent of the Gulf Coast Lines and the International-Great Northern Railroad. Fifteen hundred cars will carry 2,250,000 turkeys. The value of the production Mr. Quereau put as between \$7,000,000 and \$8,000,000. Other Southern States also are large producers of the bird of Thanksgiving, residents of one small Mississippi county, Clay, having received \$15,000 for their season's turkeys. When it is remembered that turkeys are usually a side line, cared for by the women and children at little or no expense, it becomes evident that such values, which may be considered almost, if not quite, net profit, represent a very good thing for the farmers.



# Florida Surpassing Itself in Marvelous Weather.

[Editorial Correspondence MANUFACTURERS RECORD.]

Daytona Beach, Fla., December 28.

Living in Florida in the winter time for many years, knowing something of its health-giving and life-giving climatic advantages, I thought I knew Florida's climate, but all that I have known in the past pales into insignificance in comparison with the glorious sunshine of the last six or seven weeks. In all the winters I have spent in Florida I have never known such an unbroken stretch of marvelously beautiful weather since the middle of November, and I am told that this wonderful weather began in October. The sky has been the bluest, floating white clouds have been the most beautiful, the sunshine has been the most glorious.

In former years we have usually caught in Florida a little of the tail end of the blizzards and the snowstorms of the North and West. When a blizzard swept over the West or the North we would expect to have a day or two of dull weather and possibly clouds and rain, but this year we have had none of that. No Western blizzard nor Eastern snowstorm has sent a chill to the atmosphere or even a cloudy day. We have had one day of rain, which was much needed, and one day which was partly cloudy, but otherwise, as day after day I have read the tales of the fearful storms in the North, the heavy snowstorms in the West, the 15 to 25 degree below zero weather in the Northwestern States, I have reverently thanked God for the blessed privilege of living in a place where, with windows and doors wide open, with the flowers blooming and the birds singing, it was possible to enjoy at this season of the year a weather condition rivaling the perfect day in June of which the poet sang.

Day after day the sun has seemed to shine with increasing brilliancy, the moonlight seems far beyond the power of man to describe, the softness and balminess of the air has been unsurpassed in all my experience in this or any other section. With this climatic condition I marvel more and more at the immeasurable value of this asset to Florida. It is impossible mathematically or in any other way to state its value as a tangible asset, more tangible, indeed, than the coal and iron of Alabama or Pennsylvania, infinitely more tangible than the most fertile fields of the prairie regions of the West. Here is an asset given by nature which, unlike coal and iron, can never be exhausted and, unlike the fertile soils of the Far West, cannot be damaged by overcropping.

Sitting in my office at the moment, with every window and door stretched wide open, looking out on the most beautiful trees and flowers and the glories of a sunlit sky, I wonder how people, condemned by business conditions or the lack of knowledge of Florida's climate to remain in the West or in the far North, ever live to endure the colds and the pneumonia and the other troubles which attend such unfavorable climatic conditions. From the depth of my heart I sympathize with them and wish it were possible for all of them to be transported into this Heaven-blessed region, where the climate and the outdoor life bring renewed strength and save the lives of many who in the North would have perished long ago.

Florida is now giving to the country probably as fine a sample of its weather as was ever produced. If this weather continues through the winter as it has through the last six or seven weeks, this season will go down on the records as one of the most wonderfully glorious, beautiful winters with which even Florida has ever blessed its people.

It is time that the people of the North and West who can escape the dangers of the wintry blasts and the biting blizzards should be moving in ever-increasing numbers to this land, which by many of those who come here has justly been called earth's paradise. It is a paradise of renewed health and strength, a paradise of outdoor life and enjoyment, a

paradise which gives some faint hint of that paradise into which we all hope to enter when we have passed beyond the portals of this life and rendered an account of our stewardship here. As the glories of the real paradise burst upon the enraptured vision of the wandering Peri, so the glories of the Florida climate enrapture the vision of those who for the first time realize what this climate is, and year after year as they return the vision deepens and the heart grows more profoundly thankful for the privilege of being here.

Two days later:

We had a heavy frost in this section last night, which is a reminder of the fact that no one should ever come to Florida with the idea that it is a tropical region never touched by cold weather. Winter wraps and well-heated houses are needed here at times, and those who leave their winter clothes at home may sometimes find they made a bad mistake. Only yesterday an orange grower was complaining that we had not had enough cold weather to sweeten the oranges, for cold mixed with sunshine is needed to develop their sweetness, and last night Dame Nature took good care to provide the necessary cold. The sun still shines with the same glorious brilliancy and the sky is as radiantly blue as ever.

R. H. E.

## 25,000,000 Flowering Bulbs on One Florida Property.

Daytona Beach, December 27—[Special.]—The bulb industry in Florida has been growing very rapidly during the last year or two, and especially so on the property of the National Gardens Corporation, located a few miles from this city.

The Daytona Beach Journal-News, in a recent issue, gives some facts regarding this industry which strikingly show the magnitude it is attaining as one of the factors in the agricultural progress of Florida. According to this statement, about 25,000,000 bulbs will soon be blooming on the one property. The Journal-News says:

"Constituting what is believed to be the largest shipment of the kind ever received by an American community or development at one time, the National Gardens Corporation received and unloaded Thursday a car containing 11,000,000 vari-charactered flower bulbs, the cost of which was \$18,000 and the planting of which began immediately.

"This shipment will be followed shortly by another of 9,000,000, and the planting of these means that approximately 25,000,000 bulbs will be abloom in the National Gardens stretch along the Florida East Coast Railroad when sales throughout the nation reach their height on Mothers' Day in May.

"The area planted, being planted and to be planted to narcissus, gladioli, poeticus, Chinese and sacred lilies and bulbs of other varieties, together with success recorded in bulb production at National Gardens during the past four years, establishes beyond question, in the opinion of local growers, the fact that Florida is entering the backstretch in founding another profit-assuring and beauty-creating industry—that of producing flowers of bulbous origin.

"Bulb planting having started in August, it is estimated that 5,000,000 bulbs in many varieties are now in bloom, and shipments to florists of New York, Chicago, Philadelphia, New Orleans and other metropolitan centers now average 20,000 daily. Shipments are expected to be trebled in January and February, being limited at present by the late blooming of some varieties and temporary shortage of skilled pickers and packers. When present season planting is completed a stretch extending two and one-half miles north

and south and 400 feet deep on both sides of the railroad will be covered.

"An area of 16,000 acres is being drained in National Gardens and vicinity, and, basing his action upon success achieved in five years of experimenting, W. W. Sterling, founder of the town, is buying the drainage bonds and personally directing the operation of dredges. Acreage not deemed suitable for bulb culture will be devoted to the growth of vegetables and staple crops.

"Because of Florida's demonstrated adaptability to bulb culture, and because of the embargo placed on foreign bulbs since New Year's Day of 1926, a large number of Holland, Belgian and French growers are expected to begin operations in the vicinity during the winter or spring. A large number of American growers and florists are making similar preparations and sending their choicest bulbs to the section for planting and then 'forcing' when they are returned to the Northern markets."

### Business to Investigate Agriculture.

The aims of the Business Men's Commission on Agriculture, created jointly by the National Industrial Conference Board and the Chamber of Commerce of the United States, are announced by Charles Nagel, former secretary of the United States Department of Commerce and Labor, who is chairman of the Commission, to be as follows:

"It is the purpose of the Business Men's Commission on Agriculture to make an exhaustive study of the agricultural problem in itself and in its relation to the rest of our economic activities. On the basis of such a study it is hoped that the Commission may be able to make recommendations calculated to give substantial help in the effort to arrive at a well-balanced, sound and sustained national agricultural policy. The Commission is a tender of good offices toward a united attempt in meeting the problem, and on the basis of common sense, fairness and in the national interest we hope that this tender will be met in the spirit in which it is made. The Business Men's Commission is to be an entirely independent body.

"If there be something seriously wrong with agriculture, business cannot permanently escape the consequences. Sooner or later, individuals engaged in other pursuits, such as manufacturing, mining, trade, transportation or finance, would be bound to feel the effect. The agricultural problem, whatever its causes, is therefore a national problem of immediate concern to all business groups. The farmer's relation to our national economy is vital; it affects our entire economic life, as well as our national security.

"It will be the task of the Commission to inquire into and to ascertain the nature of the agricultural problem and its causes. This the Commission plans to accomplish by intensive studies and hearings in different parts of the country, to which will be invited agricultural leaders and economists, as well as men prominent in the various business activities, who have different contacts and relations with, and different attitudes toward the problems of, the farming community, so that the many complex and intricate aspects of the agricultural problem may be fully understood and considered by the Commission.

"Other industrial nations in the past have faced, and some now face, the same or similar problems. They have found these conditions difficult to deal with and usually beclouded by political controversy. I regard it as a most hopeful sign that in the United States business interests are giving serious and sympathetic attention to the agricultural situation."

### \$1,500,000 Power Station for Maryland Eastern Shore.

Outlining its plans for the construction of a power plant on the Eastern Shore of Maryland, the Eastern Shore Gas and Electric Company of Salisbury, Md., wires the MANUFACTURERS RECORD that it will build a 16,000-horsepower steam-turbine electric-power station at Vienna, Md., and will construct transmission lines to Cambridge and Salisbury. Construction will be started about March 1, the plant and transmission lines being estimated to cost \$1,500,000.

The Eastern Shore Gas and Electric Company is controlled by the General Engineering and Management Corporation of New York.

### Construction to Begin on \$13,000,000 Alabama Power Development—Coosa River Plant to Have Capacity of 175,000 Horsepower.

Wetumpka, Ala.—According to a recent announcement by Thomas W. Martin, president of the Alabama Power Company, Birmingham, construction will be started immediately on the proposed \$13,000,000 hydro-electric power development at Lock 18 on the Coosa River, near Wetumpka. This announcement follows an order of the Federal Power Commission, Washington, granting the power company a 50-year license on the site and authorizing it to install locking facilities.

A great deal of preliminary work has been done, including a survey of proposed rights of way for railway lines and drilling for suitable foundations. It is estimated that the development will require more than three years to complete and will have a capacity of 175,000 horsepower. The dam will raise the water of the Coosa River 95 feet and cause the reservoir thus created to reach the tail-water level at Mitchell Dam, 18 miles above. It will increase the navigable length of the Coosa by that distance and with other developments will open the river to navigation for a distance of 65 miles.

The dam will be 1800 feet long and with the power house will contain approximately 350,000 cubic yards of concrete. The area of the lock reservoir will be 4800 acres. This development, like the one at Lock 12 and Mitchell Dam, will be a run-of-the-river project, as distinguished from a storage plant, such as the one recently dedicated at Cherokee Bluffs on the Tallapoosa River. A high-tension sub-station has already been built at Lock 18 and is connected with a power line from Mitchell Dam. Transmission lines will be rapidly extended to south and west Alabama.

### The Port of Palm Beach.

Chillingworth & Simon.

West Palm Beach, Fla., December 22.

*Editor Manufacturers Record:*

A recent issue of your publication contained an article in reference to the Lake Worth Inlet, or "Port of Palm Beach." In a later issue a correction was made on the original statement, based on a letter from the town of Riviera, Fla., stating that the inlet was within the corporate limits of Riviera.

This is to advise that the Lake Worth Inlet was created by special Act of the legislature of the State of Florida, and the powers, management and control of the same was vested in a board of three commissioners elected for that purpose at each general election; that the Lake Worth Inlet District comprises a large portion of the county of Palm Beach, and the Lake Worth Inlet lies within the corporate limits of Palm Beach, Fla., and the terminals within the town of Riviera.

In view of the above circumstances and the confusion that has resulted from a proper naming of the Lake Worth Inlet, the Inlet Commission at a regular meeting thereof, held on December 21, 1926, duly adopted a resolution officially naming the inlet as "The Port of Palm Beach."

L. D. SIMON,

Attorney, Lake Worth Inlet District.

### To Expend \$5,000,000 on Florida Utilities.

Orlando, Fla.—An expenditure of \$5,000,000 during 1927 for the extension of gas and ice service in central Florida has been planned by the Florida Public Service Company of this city, controlled by the General Gas and Electric Company of New York. This company supplies more than 60 cities and towns in central Florida.



# City Planning in Europe Sets an Example for America.

By JOHN NOLEN, Cambridge, Mass.

[City planning is becoming one of the outstanding questions before the American people. Women's clubs, garden clubs, civic clubs of various kinds are more and more realizing that beauty is an asset in the home and in all villages and cities.

Beautification does not always mean heavy expense. It does require intelligent work in the cultivation of flowers, the planting and maintenance of trees, and in city planning, looking ahead to the growth of cities, and making things ready so that all coming generations will get the benefit of what we of this generation are trying to do.

One of the foremost leaders in American city planning is John Nolen of Cambridge, Mass. In reply to a request from the Manufacturers Record for some suggestions on city planning in connection with his study of conditions in Europe some months ago we have the following interesting statement from him. The facts which Mr. Nolen presents should appeal to the thoughtful study of all American people.—Editor Manufacturers Record.]

The MANUFACTURERS RECORD has manifested for many years its interest in new ideas and fresh impressions, and the editor personally has always been more than willing to use the journal as a means of spreading ideas.

European travel has been one of my hobbies. More Americans are going to Europe each year. Happily, it is also true, more Europeans are coming here. Each has something to give and take. While there are some lessons, so-called, to be learned, the main result of European travel is the stimulus to the imagination and a better recognition of true values. At an important international meeting, held at Vienna last September, some one said, "The future of the world appears to be in the United States, but the future of the United States is in Europe." By this statement was meant that Europe is a great sociological and economic laboratory. This is especially true of the physical development of cities and their surrounding regions.

It would be entertaining, and I think also profitable, to compare the impressions of European visitors to the United States and of American tourists and students returning from abroad. Some one said recently that what strikes the European visitor coming to the United States is its clamor, skyscrapers, congestion and traffic, discussion of Prohibition, crime and wealth. To be sure, this is only one side of the picture, but nevertheless it is an important one. A returning American wrote recently in a magazine article that "America has gone crazy. Where is this bacchanalian orgy to end?" The writer goes on to speak of the infernal noise, the lack of respect for law and order, the interference with one's private life, the terrific cost of living, the lack of simplicity in child life, the wild, unregulated scramble for wealth. This again is only a partial view and represents the inclination of the returning American to be critical of our own ways of life and to leave untouched the great outstanding advantages which are still most characteristic of our institutions and environment.

The main point of this article is that many of the things which are unpleasant in American life and unprofitable have to do with the character of our towns and cities, their plans and buildings; and, fortunately, many of the unpleasant and unprofitable aspects of life in this country could be remedied by employing better methods and adopting better standards—by following some of the impressions which European cities make upon the traveler.

Different individuals will, of course, bring quite different impressions from Europe, according to their interests. Outdoor life for all classes of people is one of the impressions that remain with me from my recent trip to Europe. This is true of both England and the Continent, and applies to private life—in little gardens around the cottage homes; and to public life—in the use of parks, and especially in the recent development of public and semi-public baths. The

sun, the wind and the open air are worshiped everywhere, and local customs and clothing have been adapted to make the most of them for health and pleasure.

Another striking development is the great increase of playgrounds, athletic fields and stadiums. These are not merely affairs of colleges or educational institutions, nor only for large cities. They prevail widely and are provided in all parts of many cities, so that all classes of people receive the benefit. It surprises the traveler to see how much has been done in Austria, Germany and other Continental countries. I have heard many American travelers say that nothing impresses them so much in Europe as the flowers and the gardens, and the use of flowering plants everywhere in connection not only with rich estates, but in humble dwellings, and even in the business and commercial sections of cities. There is a gaiety and brightness of life which make a great contrast to our too often dull and drab surroundings.

Housing, in the single-family, cottage home, well designed and well built of durable materials, is the most conspicuous improvement in England, where over 700,000 homes, mostly of the cottage type, have been built already as a part of a program of approximately 2,500,000 in a period of 15 years. On the Continent, also, housing has received in recent years a great deal of attention, and in some cases the merit of the single-family house has been recognized. But there is not the same emphasis on the cottage home that there is in England, and one sees on the Continent many more apartments.

The European countries are keenly interested in building what are known as "garden cities." The first garden city was Letchworth, in England, and more recently what is known as the second garden city, Welwyn, also a satellite of London, has been built. But throughout England, and on the Continent as well, there are many examples of completely planned communities built upon garden-city principles.

There is great interest in Europe in better roads, but nothing like the development to be seen in this country. The explanation, I presume, is, in the first place, that the old European roads are good, and in many places are still adequate for the travel, which has not increased to the extent that it has in this country. Nevertheless, there is in Europe, as here, the formidable problem of more roads, wider roads and better pavements. But all the European countries are handicapped by burdensome taxation and lack of wealth resulting from the war, and road making halts. The skyscraper has not yet come to European cities, and it is doubtful whether it ever will. It does not appear to appeal to the European mind, and its dangers and disadvantages, now well illustrated by our experience, are understood to a considerable extent. Freedom from the skyscraper and its resulting congestion and the relatively spacious way in which city streets and plazas have been planned in foreign cities accounts as much for the difference in the traffic problem in Europe as does the lesser number of motor vehicles.

If we are open minded we can learn much of Europe; not

by copying anything that Europe has done, but by getting the stimulating influence from the observation of different conditions, of somewhat different ideals and of the solutions employed. For example, we have not yet begun to utilize our peculiar opportunities for outdoor life. Notwithstanding the activity and efficiency of the Playground and Recreation Association, and like movements, our cities are still in great need of more athletic fields, playgrounds and parks. For reasons which it is difficult fully to comprehend private individuals and the public have not yet developed a practical interest in the use of trees and shrubs and flowers to improve the appearance of homes and public places throughout the United States. Housing is still looked upon as a purely private enterprise, and it is assumed that each family is capable of providing itself with a good home. As a result of this assumption and the public neglect of housing, the general tendency in the United States is away from the single-family home and toward apartments and tenements. It becomes increasingly difficult for people of small means to have a separate, free-standing home. We have in many places the beginnings of what might be called a garden city, but nothing complete or fully fledged yet. Our traffic problem is baffling, and no one sees clearly the way out. There are many expedients, but no solution.

The opportunity to carry through changes in the environment of urban dwellers is very much greater in the Southern cities, partly because they still represent what might be called a frontier section, where inflexible conditions have not yet been established, partly because of the resources of climate which the South possesses and the advantages which climate affords and partly because there is a forward look among the people who are settling increasingly in these Southern States. A Commonwealth like Florida, for example, has almost a clean sheet to work with, and new ideals can be carried out in the most practical fashion, and with proper attention to wise permanent development. The resources of fertile land, favorable climate and agreeable outdoor life invite investment in new developments embodying the best standards of comfort, convenience and beauty. An enterprising realtor from Oakland, Cal., who was in Europe during the past summer, and who attended the International Town Planning Conference at Vienna and toured the Continent and England with a civic group, said on his return: "It requires vision and courage to plan a city. Wider streets, more parks and greater restrictions on building heights are needed. The realty business is one of the greatest professions; it creates the environment that shapes the destinies of cities. Europeans have learned the value of correct planning."

### English Cotton Trade Abandons Short Time.

Manchester, England, December 17.—A decision which may have important bearing on developments in the cotton industry was arrived at in Manchester today when the Short Time Organization Committee of the Master Spinners' Federation decided to abandon immediately short-time working in the American spinning section.

This step indicated a decided change of policy following, as it did, quickly after the decision to drop the basic-prices scheme. This will now be the first time for years that the cotton industry has not had organized curtailment of production; and as trade is very depressed, many firms—especially those in a weak financial position—will have to face a very critical period.

It is evident that the federation holds the opinion that the American spinning mills, which represent two-thirds of the industry, will have to work out their own salvation. Some mills, of course, will commence running full time from Monday next, but the majority will still be compelled to work about 70 per cent of capacity.

### Purchase of Texas Electric Properties Involves Holdings in 35 Cities—Company Increases Stock to \$26,000,000.

Dallas, Texas.—The recent purchase of electric properties in this State by the Texas Power and Light Company of this city involves holdings in 35 cities. These include electric properties at Brenham, Lampasas, Copperas Cove, Killeen, Llano, Lometa, San Saba, Cameron, Buckholts, Pettibone, Sulphur Springs, Como, Cooper, Clarksville, Annona, Lufkin, Bellville, Bastrop, Lockhart, Dale, Lytton Springs, San Marcos, Maxwell, Reedville, Staples, Kerrville, Center Point, Jacksboro, Elgin, Mineral Wells, Oglesby, Marble Falls, Manor and McDade, and the artificial gas property at Brenham. With the purchase of these properties the Texas Power and Light Company will own and operate more than 2100 miles of high-tension transmission lines, supplying electric light and power service to 215 communities.

The principal electric-generating station of the company is the Trinidad station in the lignite fields of Henderson county, which was recently placed in operation with an initial capacity of 40,000 kilowatts. It has been designed and partially built for an ultimate capacity of 160,000 kilowatts and is the first power plant of large proportion built in Texas for the use of lignite.

Capital stock of the company has been increased from \$16,500,000 to \$26,000,000 and stockholders have authorized the issuance and sale of \$16,000,000 bonds to pay for the properties acquired.

### Texas Mineral Production \$350,000,000 Annually.

Although the mineral resources of Texas are as yet in an early stage of development, the annual output is now \$350,000,000, reports the Bureau of Economic Geology of the University of Texas. Mineral production in the State is distributed at present among the various minerals, as shown in the table given herewith, made up, except where indicated as estimates, from statistics collected in co-operation between the Bureau of Economic Geology of the University of Texas, the United States Bureau of Mines and the Census Bureau. It is based on the returns for the year 1925, except petroleum, which is for 1926. Returns are estimated for mineral water, petroleum, silver and sulphur. The table follows:

Product.	Quantity	Value
Asphalt, short tons.....	204,527	\$692,731
Cement, barrels.....	4,735,521	8,729,046
Clay, tons.....	4,821	20,247
Clay products, brick and pottery.....		6,305,487
Coal, tons.....	1,008,375	1,566,000
Fuller's earth, tons.....	30,462	310,145
Granite, tons.....	7,860	178,375
Gypsum, tons.....	558,132	3,721,954
Lime, tons.....	74,638	698,132
Limestones, tons.....	2,495,440	1,898,185
Mineral water, gallons.....	350,000	50,000
Natural gas, cubic feet.....	127,995,594	6,659,915
Petroleum, barrels.....	162,318,750	308,465,231
Sand and gravel, tons.....	6,093,476	3,478,517
Sandstone and basalt, tons.....	147,700	165,800
Graphite, quicksilver, salt, silver and sulphur .....		7,102,311
Total.....		\$350,042,076

Since the mineral products contribute to the common wealth, the State contributes, by scientific investigation, toward their development. At the University of Texas there is maintained as a part of the State work a division for the development and conservation of the natural resources. This division of the university consists of three departments as follows: The Bureau of Economic Geology, the Engineering Experiment Station and the Industrial Chemistry Experiment Station. Each of these departments is concerned with phases of development and conservation of mineral products, as indicated by its title.





## HIGHWAY BUILDING AND MOTOR TRANSPORTATION IN 1926

**T**HE following pages are devoted to the story of highway building and the development of motor transportation.

We commend to everyone interested in the welfare of the country the study of the facts here set forth that they may catch an inspiration of what improved highways mean in the life of the nation.  
and in material prosperity.



## Highway Building on a Larger Scale Is One of the Supreme Needs of the Country.

**W**HEN the internal-combustion engine came into being it marked a new epoch in human affairs. It revolutionized our means of transportation by land, by water and by the air. In all of this the change has been so rapid that we have hardly adjusted ourselves to the full realization of what it means in human activities.

The internal-combustion engine brought into being the automobile, the motortruck, the motorbus, the motorboat, the motorship, the airplane. All that has thus far been accomplished through the utilization of this new power is, we believe, small as compared with the progress of the coming years. Daring, indeed, must be the vision of a man who ventures to look into the future and attempts to draw aside the curtain which veils the future from our knowledge and tries to set forth some of the things he can thus visualize. We can, however, conjecture and draw a little upon our imagination based on what has already been done.

The automobile, once a toy, a plaything for the rich man, has become a prime factor in all the ramifications of life throughout the country. It has changed the face of the earth. It has changed all business methods. It has well-nigh wiped out distance. It has made suburban development on a large scale a possibility, and in doing so has created vast wealth and stopped the trend toward congestion of population and business in limited areas. It is helping to decentralize business to the good of the country. It has given longer life and greater health to millions of people. It has taught them to love nature. To a large extent it has taken the place of the saloon, and men now drive their families into the country and on picnics, where formerly they wasted their money in riotous living in corner saloons.

It has made us a nation of mechanics. It has taught the farmer boy, the educated white man, the uneducated negro, something of mechanics, and it has stimulated in them a desire to know more of electricity and of machinery, and in this respect the automobile becomes in reality technical schools for broadening the knowledge of tens of millions of people about machinery and how to utilize power.

Back of all material advancement; indeed, it might be said, in these days back of all of the advancement in education and in science, in the maintenance of religious activities made possible by prosperity, is **power**. The cheaper the power that can be utilized, the greater is the advancement of the country. The more abundant the power available on the farm and in the factory, and for all the business and pleasure activities of a nation, the greater will be the country's material advancement.

### Power is the creator of wealth.

He who lessens the cost of power and gives to it a wider distribution is a benefactor of mankind. Whether consciously or unconsciously, he is hastening the day for more widespread prosperity and for the uplifting of millions of people who, without the use of power, would have continued through the coming generations and centuries to be denied the blessings which are now so common to us.

Prior to the coming of the automobile this country was sinking lower and lower in its highway work. Mud roads, impassable in winter and early spring, and bottomless sand roads in some sections, were all uniting to lessen the religious and educational activities of the country. In vain were country churches built and country schools established where impassable roads made church and school attendance almost an impossibility. Millions of children were growing up with but little religious and few educational advantages. In the

early days of motoring a foreign ambassador undertook to drive from Washington to Baltimore, a distance of 40 miles, and made the journey in five hours' time over a highway that was a disgrace to civilization. But that highway was merely typical of nearly all the so-called highways of the land.

We have commenced to build highways. The convention shortly to be held in Chicago of the road builders of the country will bring together thousands of men who are among the great constructive forces of the country. There will be road engineers who have visioned what good roads mean. There will be contractors who are doing the work of highway building. There will be inventors and machinery manufacturers in attendance, all united in the purpose of seeking to give to this country a greater highway system than has yet even been projected.

As they study the problems connected with this question they will come more and more to realize that highway building in America has only started. We have been doing pioneering work only. We have put down a few miles here and there as compared with the hundreds of thousands of miles of road that must be built. We have built narrow roads. We have built roads that are without the strength and foundation needed for the traffic which is developing. We have seen many roads destroyed because they could not stand the heavy traffic of motorbus and motortruck. We have seen roads built by inexperienced engineering and inadequate contracting work. What has been done is largely of an experimental character. What must now be done will be as much greater than what is being done as what is being done is greater than the "do nothing" policy of 30 or 40 years ago.

We must now begin to realize, and the Chicago convention will doubtless open the eyes of many to the necessity of this situation, that the amount of money expended in highway building must be doubled and trebled. Our highways must be wider, more solid, more permanent; built to stand any amount of traffic, for the traffic of today by automobiles, motorbuses and motortrucks is small as compared with the traffic of the next few years.

This country is growing with such amazing rapidity, increasing its population at the rate of 2,000,000 a year, developing its industrial and business affairs of all kinds far more rapidly than its population is increasing, that we must plan great things for the future.

It is true that there is much talk of increased taxation. Perhaps some remedy for this must be found. But it will not be found by lessened highway building. Indeed, the tax on gasoline makes it possible to build highways without a dollar of cost to the public, or without a dollar of additional taxation. The user of the highway actually saves money by paying a gasoline tax. This has been so completely demonstrated that argument on that point is no longer necessary.

It is well, therefore, that the leaders in this great industry, men of engineering skill, men who are profoundly studying the problems of transportation, men who are catching a glimpse of what road building in the future must be, should meet in a great convention to be held next week in Chicago and there study every phase of road building. The attrition of mind against mind will bring new ideas to the front, new plans will be developed, new methods of highway construction will be studied; and out of these annual conventions will radiate an influence for the good of the whole country.

The highway builder, whether he be the engineer, the contractor or the day laborer on the job, is to the extent of his work and influence rendering a great service to humanity.



# Transportation on Rubber Instead of on Rails.

By HENRY R. TRUMBOWER, Economist, United States Bureau of Public Roads, Professor of Economics, University of Wisconsin.

The motor vehicle is today the principal passenger carrier in the United States. In addition to motor-vehicle transportation over the highways, steam-railway and electric-railway transportation are the important types of land transportation. This is primarily true of the movement of passengers from place to place; in case of freight service the steam railroad still predominates. The oldest of these three types of land transportation is highway transportation, although the motor vehicle has to a great degree supplanted the horse-drawn wagon. In the early days of this country the people were wholly dependent upon the transportation afforded by the highway and upon water transportation—inland and coastal. During the early part of the last century the canal was introduced as an important factor in the country's transportation economy. Just about 100 years ago the development of the railroad was started. The venture proved such a success that it was not long before those who had vision could see that both the canal and the highway were doomed as agencies used for the transportation of persons and property for long distances.

Canals were abandoned and finally allowed to go into decay. The advent of the railroad also checked the relative importance of the highway. To be sure, the highway did not go the way of the canal, but its significance as a long-distance carrier waned so that it was not regarded as being more than a local transportation agency. The highway had been looked upon as a necessary feeder to the canal. When the railroads were built, and finally took the place of the canal, the highway was properly regarded as the necessary feeder to the rail lines. Local travel between towns and cities short distances apart still sought the highways. After the advent of the electric railway and the electric interurban lines, however, much of this so-called suburban and interurban business was diverted from the highway and also from the steam railroads to the electric lines, which were capable of conducting both a passenger and a freight business. That business, which was at that time transferred from the highway to the rail lines, is back on the highways again because through the automobile the traveling public found an agency which afforded almost as much speed as the rail lines and greater convenience.

In discussing the relative development of the railway and the highway in this country and in England a noted English economist pointed out this difference: In England practically all the highways had been developed and built prior to the time of the advent of the railroad; in this country, except in the old and well-settled sections of the Eastern States, the railroads came first, and highways were later laid out and built, leading off in most cases from points on the railroads to the interior country. Except for the Eastern section of the country, highway transportation for the most part did not assume any of the long-distance aspects which characterized the English and Continental systems of highway transportation. The railroad developments and extensions in this country became, to a large extent, the determining factor as to the settlement of the people and the development of industries and commerce. Sections of the country without railroad facilities were slow to be developed and settled for the reason that population tended to follow the construction and extension of railroad lines.

This condition, where the railroad was the main agency

of land transportation, continued to exist until shortly after the beginning of the present century. The use of the automobile brought about a change. If it had not been for the invention, development and extended use of the motor vehicle, our highways would not now occupy, relatively, a much more changed position in our economic life than they did during the greater part of last century. The advent of the automobile created a new demand for the use of our roads in that it was capable of being operated longer distances than the horse-drawn vehicles over a given period of time at greater speed, and thus afforded a greater service to the public. Thus a new use and a new service was furnished by the existing highways. Today the highway and the motor vehicle furnish us with one of our main and most important agencies used in the transportation of persons and goods from place to place instead of being a secondary transportation agency and a feeder to railroad lines.

This highway transportation system and equipment, which includes the vehicles as well as the roads, comprises an investment of approximately \$26,500,000,000. This amount can be compared with a total investment or value of steam railroads of about \$22,000,000,000. The street railways and interurban lines represent an investment of approximately \$5,000,000,000, according to a 1922 census report. We are consequently justified in saying that the country's investment in highway transportation is practically equivalent to the total reported investment in all steam railroad and electric railway property in the United States. The figures used in connection with these railroad investments are based on Government reports and on census figures. The highway and motor vehicle figures can at best be but an estimate based on the knowledge we have of the number of motor vehicles in use and of the amount and character and costs of improved highway mileage of the country.

At the end of 1925 there were 20,051,276 motor vehicles in use in the United States; 17,597,702, or about 88 per cent, were passenger cars, and 2,453,574, or 12 per cent, were classified as trucks. The investment in these vehicles can be estimated as amounting to \$18,551,934,832. This estimate is based upon an average cost of \$866 per passenger car and an average cost of \$1350 per truck, which were the average retail selling prices in 1925. In order to arrive at the total investment, it does not appear unreasonable to use these figures and apply them to the total number of vehicles in use. As a matter of fact, this estimate is conservative in that the average selling price of motor vehicles has been on the decline since 1920, when the peak of average prices was reached. The prices between 1918 and 1920 were also higher than the 1925 average. To say, therefore, that the passenger cars and trucks used at the present time cost the people of the country \$18,500,000,000 is putting the investment in motor vehicles at a minimum figure.

The road or highway surfacing, as it exists today, not including any expenditures for city streets and omitting any right-of-way values, may be estimated as representing an investment of about \$8,000,000,000.

The per capita investment in motor vehicles, according to these estimates, amounts to \$161; the per capita investment in improved highways \$69. This total investment of \$230 per capita in highway transportation may be compared with the investment in all the steam railroads and street railways of about \$235 per capita. The country's total investment in railroads—steam and electric—and in highway transportation, roads and motor vehicles amounts to about \$53,000,000,000. This is only one billion dollars less than the total value of all the farm land in the United States, according to the

1920 census. Reduced to a per capita basis, the average investment in railway and highway transportation facilities amounts to about \$465 per capita.

This transportation property and equipment is all privately owned and operated, with the exception of the highways, which are built and maintained at public expense. This is our big experiment in public ownership. The investments in transportation represent a 15 per cent ownership by the public and 85 per cent by private individuals and corporations. The corporate ownership field is largely restricted to the steam and electric railways; the motor vehicles are individually owned and operated, except for the small number of vehicles owned and operated by corporations engaged in business or in furnishing some form of common-carrier service.

The horse-drawn vehicle has practically disappeared from the main-traveled highways. So it can readily be said that highway transportation of the present day involves in almost every instance the use of the motor vehicle. In a highway traffic census taken in Louisiana in 1925 it was found that the motor-vehicle traffic on the highways was 95.2 per cent and the horse-drawn traffic 4.8 per cent. In Massachusetts, where traffic counts have been made yearly since 1909, the horse-drawn traffic has decreased from 58 per cent to 2½ per cent in 1921, and in 1924 the horse-drawn traffic was reported as negligible.

To what extent it is possible for these 20,000,000 motor vehicles—passenger cars and trucks—to serve the people? They are capable of operating over all of the streets of our cities and over 2,976,887 miles of rural highways in the United States. The problem of congestion of street and highway traffic arises out of the uneven distribution of traffic over the existing street and highway mileage. Certain streets in cities are obliged to carry more than their proportionate share of the traffic; likewise, in the country the so-called main or trunk highways carry the preponderant share of the traffic. The traffic surveys which have been made show that about 10 per cent of a State's highway mileage carries approximately 50 per cent of the motor-vehicle traffic.

The motor vehicle operated over the highways of the country has become the principal passenger carrier, but the steam railroads still remain the principal freight carriers. The 17,597,702 passenger motor vehicles, based upon an average capacity of 4 persons per car, represent a total passenger-carrying capacity of 70,390,808 persons.

More than half of the country's total population can be carried at one and the same time by the existing number of passenger automobiles in use. If we further assume that each of these passenger cars is operated an average of 5000 miles a year and that 2½ is the average number of passengers carried per car, we arrive at a total automobile-passenger mileage of 219,971,272,000 miles. A large portion of this passenger mileage is produced wholly over city and town streets. Sufficient facts have not yet been developed which show accurately what proportion of this estimated passenger mileage is produced on the rural highways and what part is to be credited to city streets. An estimate that one-half of the total passenger-car mileage is found on the rural highways appears, however, to be conservative from every point of view. Based upon this apportionment, 109,985,636,000 passenger-miles represent the annual passenger mileage carried by the rural highways of the country. The Interstate Commerce Commission reports that for 1925 the total passenger mileage of Class 1 railroads amounted to 35,963,862,000 passenger-miles. One is therefore safe in estimating that the automobiles of the country carry approximately three times as many passengers one mile over the rural highways as the steam railroads carry over their lines.

The electric railways, urban and suburban, are said to produce about 40,000,000,000 passenger-miles. When these are added to the passenger mileage of the steam railroads, we get a total of 75,963,862,000 passenger-miles, as against a total of

219,971,272,000 passenger-miles produced by automobiles over both city streets and rural highways. This demonstrates clearly that the automobile is the principal passenger carrier.

The passenger-carrying capacity of the railroads is limited to 41,399 passenger cars and coaches, with a total capacity of 2,612,056 passengers. The passenger-carrying capacity of the automobiles is 70,390,808, or about 30 times as much as the steam railroads' passenger-carrying capacity. The electric railways have in service approximately 100,000 passenger cars, which have an estimated passenger capacity of approximately 4,000,000 passengers. When this passenger capacity is added to that of the steam railroads it is still evident that the automobiles of the country have by far the greatest passenger-carrying capacity of any of the land transportation agencies.

When a study of the freight service is made, a different result is seen. The 2,453,341 motortrucks in use have an average carrying capacity of 1¼ tons. Approximately 82 per cent of the trucks are estimated to be of 1-ton and less capacity, thus indicating that the small-capacity truck is much more used than vehicles of larger capacity. The total freight-carrying capacity of these trucks amounts, therefore, to 3,066,676 tons. The freight cars of all kinds operated by and over the steam railroads of the country number 2,547,169, with a total freight-carrying capacity of 111,450,034 tons. It appears, therefore, that the total motortruck capacity of the country in urban and rural service is but 2.8 per cent of the freight-carrying capacity of the freight cars operated by the steam railroads.

If we assume 10,000 miles as the average annual mileage per truck and apply this mileage and 1¼-ton average capacity to the total trucks in use, we arrive at a total capacity mileage of 30,666,676,500 capacity ton-miles. This figure is far from the actual ton-miles produced. The various traffic surveys made thus far show that only two-thirds of the trucks operating over the highways carry loads and that these loads average about 80 per cent of the capacity of the trucks. When an adjustment is made for these conditions it is seen that the estimated ton-mileage of motortrucks is reduced to about 16,355,526,667 ton-miles.

The total freight ton-mileage of the steam railroads was reported to have been 414,139,835,000 ton-miles in 1925. The estimated ton-mileage produced by the motortruck, according to these figures, is equivalent to about 3.3 per cent of the total freight ton-mileage of the railroads of the country. To what extent this ton-mileage was produced by trucks operated over our rural highways is difficult to tell. If we again assume that half of the motortruck mileage is produced over city streets and half over rural highways, it would appear that a fair estimate of the services rendered by motortrucks over rural highways is represented by about 8,000,000,000 ton-miles; this is but 1.9 per cent of total railroad ton-mileage.

These estimated figures indicate clearly that the highways are essentially passenger carriers and the railroads are still the important freight carriers. There is no doubt that a very considerable number of the passengers carried over the highways by automobiles are persons who would use the railroads if motor-vehicle transportation did not exist. How large this number is cannot be definitely ascertained. About one-third of the persons riding in automobiles on the rural highways are on business; the remainder may be classed as non-business users of the highways. A large part of the number who are using the automobile for business purposes would, no doubt, use railroad facilities—either steam or electric—to carry on its business activities if these new highway-transportation facilities did not exist. Those traveling by buses are mostly all engaged in business and such activities as would cause almost all of these to travel by railroad were they denied the use of buses and automobile travel. Those traveling in buses comprise the smaller part of those



traveling over the highways by motor vehicle. The largest number uses the private passenger automobile. In a Louisiana traffic count it was shown that 93 per cent of the highway passengers traveled in privately owned and operated automobiles and 7 per cent use motorbuses.

The passenger mileage on the railroads has been decreasing when compared with the maximum attained in 1920. The Class 1 steam railroads of the country that year produced 46,848,688,000 passenger-miles; in 1925 it stood at 35,963,862,000 passenger-miles. This 1925 figure is higher, however, than it was any year prior to 1917. The number of passenger-miles per capita produced by the railroads has been greatly increased since 1890. The average annual passenger mileage per capita in the 1890-1899 decade was 192 miles; in the 1900-1909 decade it was 276 miles; in the 1910-1916 period it was 345 miles, and from 1917 to 1920 the annual average rose to 423 miles. This latter period covered the war years and the years immediately thereafter. During the six-year period beginning with 1920 and ending with 1925 the total passenger mileage per capita was 348 miles. This average is practically the same as the 1910-1916 average.

In the absolute number of passengers carried there has been a greater decrease relatively. In 1925 the railroad carried 886,650,000 passengers, as against 1,269,912,000 in 1920, which was the maximum year. During this period of time the total passenger mileage decreased 23 per cent and the number of passengers decreased 30 per cent. The number of passengers carried in 1925 was less than that found in any year since 1908, when it was 890,009,000. In this period, from 1908 to 1925, the average length of journey per passenger increased from 32.86 miles to 40.56 miles, or 24 per cent. In 1920, when the largest number of passengers was carried, the average journey per passenger comprised 37.3 miles, but during these past five years there has been a steady increase, substantially, in the average length of a passenger's journey or trip. There is no doubt that the automobile has been the principal cause of the reduction in the number of passengers carried by the railroads, and this reduction in the number of passengers has been confined largely to local and short-distance travel.

Great increases are noted in the per capita freight traffic of the railroads. The freight ton-miles in the 1890-1899 period averaged 1355 ton-miles per capita annually; in the 1900-1909 decade they were 2247 ton-miles; in the 1910-1916 period they were 2983 ton-miles, and in 1917-1920 the average was 3830. In the 1920-1925 period the average ton-miles per capita were 3468. The average annual passenger mileage per capita had increased from 276 miles in the 1900-1909 decade to 348 miles in the 1920-1925 period, or 25 per cent. The average annual freight ton-mileage per capita increased over this same period of years from 2247 to 3468 ton-miles, or 53 per cent. A relatively much greater increase is noted in the per capita freight traffic than in the per capita passenger traffic.

Long-distance motortruck traffic is not encountered to any great extent on our rural highways. The average trip mileage in all sections of the country where traffic surveys have been made is relatively short so far as motortruck transportation is concerned. The average motortruck haul ranges from 23 to 26 miles; 40 per cent of the truck movements on rural roads are less than 10 miles in length; about three-fourths of the motortruck movements occur over routes less than 30 miles in length. Not more than 2 to 4 per cent of the trucks operated over rural highways travel over routes of more than 100 miles in length.

The motortruck's distinctive field of service is in the short-haul area where the pick-up and delivery factors are essential elements of the total service performed. The commodities hauled are primarily foodstuffs and perishables; about 40 per cent of the traffic consists of vegetables, fruits, milk, butter, agricultural produce and truck crops. This is really one phase of market distribution. On the railroads the products

of agriculture and of animals constitute about 11 per cent of the total tonnage. Another significant movement by truck is the hauling of building materials, gravel, crushed stone, rock and lumber. These are all short-distance movements, usually from a yard or quarry to the point where they are being used.

Where so-called long-distance hauling by truck takes place it is usually found to consist of specialty hauling, such as furniture, or it consists of high-value commodities or of such where the element of time is more essential than that of transportation costs.

The annual costs of conducting our highway transportation system, road and vehicles combined, are naturally of great interest. The reports and cost statements filed by the carriers show what the transportation expenses amount to for a year's period on the railroads. Similar and comparable records and reports are lacking with respect to the total costs of operating motor vehicles over the highways. With almost as many individual owners and operators as there are motor vehicles, it is impossible to arrive at actual and accurate cost figures. Furthermore, the expenditures for highway construction and maintenance are made out of public funds—local, State and national. The public treasury is, in turn, partially reimbursed through special motor-vehicle license fees and other charges levied upon the users of the highways; the rest of the expenditures are financed through taxes and public loans.

If one uses an average cost of 10 cents a mile as covering the interest, depreciation and operating expenses involved in the operation of an automobile, and makes the further assumption of 5000 miles as the average annual mileage per motor vehicle, the total annual motor-vehicle expense of the whole country amounts to approximately \$10,000,000,000. The country's total annual highway expenditures, not including any city street expenditures, have amounted to about a billion dollars these past five years or so. Motor-vehicle transportation involves, therefore, an annual cost of at least \$11,000,000,000.

It should be observed in this connection that the highway costs are only 9 per cent of the country's total motor-vehicle transportation costs for a year. Money spent for the improvement of the rural highways, and thus reducing the per-mile expense of operating motor vehicles, can be regarded as economical expenditures.

The revenues of the steam and electric railways of the United States in 1925 were approximately \$6,750,000,000. From these figures it would appear that one would be safe in saying that the total annual costs of motor-vehicle transportation are almost double the total revenues of steam and electric rail carriers. The facts, along with others, indicate clearly to what extent the people of the country, throughout all sections, are dependent upon motor-vehicle transportation and how important highway transportation has become. A large part of the transportation business of the country is carried on rubber instead of on rails.

### Road-Building Activity in Brazil.

The Secretary of the Brazilian Embassy, Washington, advises the MANUFACTURERS RECORD that the Second International Conference on Highways will be held in Rio de Janeiro, the capital of Brazil, beginning July 17, 1927. The secretary writes: "The results of this conference will, no doubt, give a great impulse to road construction in Brazil and to many other countries of America. It is a well-known fact that the present Brazilian Administration is deeply interested in the subject. A very long road, part of which is already complete, is being constructed between Rio de Janeiro and Sao Paulo. Four thousand men are working on it. This will show you that road construction is a subject of actuality in Brazil."

## Transformation of Mountain Communities in West Virginia Through the Building of Good Roads.

### HOW A COAL-MINING COMMUNITY HAS BECOME "A PLEASANT PLACE IN WHICH TO LIVE."

What the building of improved highways means for the material, educational and spiritual development of country and isolated mountain districts is forcefully presented in a recent issue of the Charleston (W. Va.) Gazette by Col. W. M. Wiley, general manager of the Boone County Coal Corporation. The statement refers to the fact that the Gazette had long appreciated what the completion of the Logan-Charleston road, a 60-mile stretch over the mountains, would do for Charleston and for Logan, the county-seat of Logan county. Accordingly, Mr. Wiley, thoroughly familiar with conditions in the mining communities of the State, was requested to prepare an article on the benefits resulting from the building of this improved road.

Uppermost in Mr. Wiley's mind were the conditions that existed in the mining community only as far back as 1918, eight years ago, says the account. "The thing in those days which was called a road would not be dignified by even the name trail in other sections of the country," he points out. "We then traveled along a rough, undrained path for a few rods and descended into the creek bottom for a long way, where we floundered and splashed over the boulders hidden in the water, and bounced and chugged about in different directions to try to make a little progress in the direction in which we aimed. Much of the motion was sideways, most of it was up and down, and only a small portion of the violent concussion served to make progress in the way we were going. In those days some wit made the remark that the roads 'crossed the creeks lengthwise,' and this is about right. It was in those days that one of the judges of the district court announced in one of his decisions that 'in West Virginia in the summer time the roads are in the creeks, and in the winter time the creeks are in the roads.'"

The creek roads were not the only bad roads; the condition of the road over Blair Mountain, from the little village of Blair to the village of Ethel, over which all residents of the Coal River District of Logan county had to travel to get to the county-seat, is vividly recalled by Mr. Wiley. He says: "The County Court had undertaken to improve this road and had cut into the mountain and spread the rocks along the roadway. The rocks had been covered with a loam dressing, but the culverts and drainage structures had not been completed, so that when the first rain came the loam was washed off and these stones, newly blasted, presented a series of sharp-pointed surfaces and we chugged along from one eminence to the next hollow. We slipped from side to side, and we bounced and groaned until every muscle in our bodies ached.

"In those days the money spent for road maintenance and construction was not expended for actually building roads or even in draining them, but was largely spent in moving the heaviest boulders out of the creek bottoms, which, in a short time, were swept back in the creek by the water.

"Human nature can get used to many things. We had gotten used to transportation of this sort and took it as a matter of course. We felt that the roads in West Virginia had always been like this, and that those of us who had found it necessary to live in the coal fields must of necessity give up all those joys of life which come from the communication and association with our fellows.

"Some few wild dreamers and idealists had visions that, as roads had been built in other mountainous districts, roads

could be built in this mountainous district. They began to talk of the great advantage a good road would be to the community, and they were laughed at as dreamers. This is not an exaggeration. When the good road from Logan to Charleston was first talked of everybody laughed and talked of it as a good joke."

Mr. Wiley describes the untiring efforts of the "dreamers and idealists" in the interest of improved roads for the mountainous sections. The work went on and finally a \$50,000,000 State bond issue was voted. Soon the improved mountain road was built. It is now possible to drive from Sharples, W. Va., to Madison in 20 minutes, to drive from Sharples over Blair Mountain to Logan in 40 minutes, and to Charleston in two hours and a half. What is more, this can be done throughout the year, regardless of weather conditions. Now the various lunch clubs in the section visit one another regularly. A recent safety meeting at Madison was attended by at least 6000 people—and good roads made this large gathering possible.

"We can be friends with our fellow-man now," says Mr. Wiley, "and living in the coal field today does not mean that we are shut off from all association with the outside world."

Formerly bells on milk cows kept the coal camps awake all night. Now milk is delivered by wagon daily. The daily newspaper that used to arrive in the afternoon is now delivered at six o'clock in the morning from Charleston. It used to be very difficult to get laundry work done regularly; now Charleston laundry wagons visit the community four times weekly. The bread wagons make daily deliveries.

Trucks and business wagons now crowd the road, and it has become one of the most important highways in the southern part of the State. Aside from its industrial and commercial value, the road passes through a country which is rich in natural beauty. "One cannot help wonder," says Mr. Wiley, "as he drives along the road and sees the newly painted mountaineers' residences, how different the world must seem to these people from what it used to be when they were closed in from their neighbors."

In summing up the improvements that have resulted from the building of roads Mr. Wiley says:

"The world looks entirely different now to the people who try to look at it from the coal camps. All along the road the houses are better painted, the young women are better dressed, the schools are better and country children attend consolidated schools in fine motor buses, traveling 10 to 15 miles. Not only have the dreams of idealists come true, but so much more has come true that they could not have foreseen. The coal camp has come to be a pleasant place in which to live, with Logan, Madison and Charleston just over the hill."

### Many North Carolina Bus Companies Merged.

Within a period of a year, as a result of sales and consolidations, 45 motorbus lines operating companies in North Carolina have been merged into 28, according to R. O. Self, clerk of the Corporation Commission, Raleigh. Many of the companies consolidated were operating over the same route, and this has simplified the administration of the bus law, which became effective March 22, 1925, and eliminated the necessity for prorating schedules, etc. It has also enabled the carrier buying out his competitor to put into service and maintain larger and better equipment than the individuals operating over the route formerly operated, says Mr. Self.



# Highway Expenditures Must Be Doubled to Meet Increasing Transportation Needs of the Country.

By HOWARD L. CLARK.

Before we can make money in business we must spend money for plant facilities. When these plant facilities become inadequate to meet the increasing demands upon them we must pay more money for improvements and additions, in order that continued operation may show a profit and greater savings be obtained. Therefore, we have the paradox of spending money in order to save money. Industry and transportation are meeting this situation.

In railroad transportation alone it is estimated that \$1,000,000,000 a year for the next 10 years will be necessary to supply facilities to take care of the growing demands of traffic. Likewise in our waterways systems, which recent discussions have shown are now beginning to earn a substantial dividend and savings to the American people on the \$1,250,000,000 expended for their improvement, the National Government is spending for river and harbor improvements over \$60,000,000 a year and millions more will be needed before we are to secure the greatest advantage of our water routes.

The same situation today faces the highways of the country, only in a more pronounced form. In proportion as the railroads of the country are more numerous and reach more people than waterway facilities, so the country's highways are in greater numbers and offer a more universal service to the public than any other form of transportation. Our country, in the rate of progress it is making and that it may not be hampered in its normal growth, must utilize every effort to see that transportation facilities, whether rail, highways, waterways or airways, are keeping pace with the country's transportation requirements. Highways are vital factors as feeders to railroads and inland waterway carriers and, with the fuller use of the motorbus and motortruck, are themselves becoming a great artery through which the life-blood of the nation's commerce is carried.

Government figures show that there are 3,001,825 miles of roads in the United States. Of this total mileage 275,658 miles, or less than 10 per cent, have been improved to the degree of grading and drainage, and under bad weather conditions many of these roads prove a delusion and a snare to the motorist; 521,915 miles, or less than 18 per cent of all roads, are surfaced, and but 75,388 miles, or 14 per cent of surfaced roads, or 2.5 per cent of all the roads in the country, are bituminous, asphalt, concrete or brick. Over \$1,288,000,000 was spent in 1925 on all the roads of the country, and the amount will be even greater for 1926. In 1914 the United States expended or invested \$240,264,000 for highways. The United States is now investing annually about four and a

half times similar expenditures of 11 years ago. During this period the number of motor vehicles have increased from 2,000,000 to 20,000,000, or ten times. Preliminary figures compiled by the National Automobile Chamber of Commerce indicate that there are now 22,000,000 motor vehicles in the United States. We are now making in one year more than double the motor vehicles in the country in 1914. In fact, highway expenditures in the Southern States, amounting to approximately \$400,000,000 annually, are now \$150,000,000 in excess of what the country spent in 1914, while the motor vehicles registered in this section alone in 1925, numbering

5,153,000, are over 3,000,000 more than were in the United States in 1914.

No one can say that there is no need for more highways or improvements in widening existing roads. Such an assertion would mean a belief that the United States has reached its ultimate development. In the more thickly populated sections of the country the roads built only a few years ago are found to be inadequate to handle the present-day motor traffic. Instead of one narrow road it will not be many years before there will be constructed roads double the width of those at present, which are hampering the free movement of traffic, and probably in the more congested areas a separate trunk-line highway for slow, heavy truck traffic and another paral-

leling it for fast motorbus and automobile passenger traffic. Then, too, the expenditures for road repairs and upkeep, if we expect to maintain what has been invested, must be greatly increased in order that our highways may continue to give the most profitable transportation service. In practically every State highway expenditures could be doubled and still be far behind actual needs to insure adequate facilities for motor traffic in the next few years.

In the beginning much of the mileage was a one-track road, and in isolated sections in thinly populated States this condition still exists; a little later roads of 14 feet and then 16 to 18 feet wide were exceptional, but in Illinois 20 feet is now the minimum width, with 40 feet at intersections.

Let us not lose sight of the fact that in this vast expenditure on road building every dollar for construction and maintenance cost is an investment paying substantial dividends in savings to the American people. Every mud or sand road eliminated, every hill cut to grade, every crooked road straightened, every crowded highway which is being widened to enable motor traffic to move more freely and thus save time between given points, adds to the savings of our hauling costs and increases the efficiency of American business. The time saved and reduction of wear and tear on motor vehicles

## TOTAL ROAD MILEAGE AND HIGHWAYS IMPROVED AT END OF 1925.

(Includes Existing Roads in County, Local Rural Roads and State Highway Systems.)

States	Grand Total Mileage All Roads U. S.	Mileage Improved Earth to Established Grade and Drained	All Sand, Clay, Gravel and Hard-surfaced Types	Bituminous Asphalt, Concrete and Brick
Alabama .....	61,541	7,585	13,560	345
Arkansas .....	74,865	1,901	6,499	804
Florida .....	30,263	3,144	9,844	2,470
Georgia .....	97,892	24,144	18,710	1,254
Kentucky .....	68,704	761	17,231	521
Louisiana .....	39,803	.....	5,183	73
Maryland .....	14,868	1,579	4,689	1,111
Mississippi .....	56,108	1,264	9,910	470
Missouri .....	110,500	12,264	10,658	1,428
North Carolina .....	68,148	15,021	20,017	2,456
Oklahoma .....	134,262	3,605	1,686	571
South Carolina .....	64,634	6,582	10,061	346
Tennessee .....	65,322	9,791	13,325	1,146
Texas .....	167,685	2,985	20,115	1,440
Virginia .....	59,080	4,434	9,782	1,007
West Virginia .....	35,243	1,159	1,628	1,094
<b>Total South.....</b>	<b>1,148,918</b>	<b>96,219</b>	<b>172,898</b>	<b>16,536</b>
<b>South's Percentage...</b>	<b>38.2</b>	<b>34.9</b>	<b>33.1</b>	<b>21.9</b>
<b>United States.....</b>	<b>3,011,825</b>	<b>275,658</b>	<b>521,914</b>	<b>75,388</b>

represent in dollars and cents an amount which would more than cover the cost of these improvements. In addition there is an added investment created by the building of improved highways to the adjacent property values of all sections through which such roads pass. This amount alone is probably in excess of the nation's highway expenditures. The building of good roads and the automobile made possible our great suburban developments, which have added billions to the nation's material wealth and been of untold value from the health standpoint.

Another source of wealth creation, for which the automobile and good highways are responsible, comes from the improvement in the diversification of crops in the farming sections where roads have become improved and made passable throughout the year. This means that the farms are more valuable, because their earning power is greater, and it also means that the community or city consumers are benefited by the farmer being able to bring his products to them, increasing the price the farmer receives and reducing the cost to the consumer.

Traffic surveys indicate that in general the roads being built today are inadequate to care for the demands made on them by the constantly increasing number of passenger cars, trucks and motorbuses. A motor trip over any of the hard-surfaced roads of the main highway routes proves the congested conditions existing, retarding the free movement of highway traffic and endangering lives and property.

Twelve States of the 48 have approximately 300 miles each of hard-surfaced roads, and many of these States are seeing their proper development retarded and are thus penalizing millions of people, because income is cut down and the wealth of the nation reduced in proportion.

One State highway authority believes that if we do not begin shortly to relocate some of our present-day highways built years ago, principally for horse-drawn traffic, and remove some of the safety devices we are now using and make the highways really safe without their use, we will find ourselves in the same position that the cities and towns are finding themselves in with regard to the parking situation. Traffic must be speeded up, and the only way to insure some degree of safety is to rebuild many existing roads and make the new ones wider and of heavier construction.

At our present rate of road building it has been said that between 3,000,000 and 4,000,000 carloads of material are going into new highways each year. At the new rate, if the materials can be supplied, the total probably will run to 10,000,000 carloads a year, and that, if shipped all at once, would crowd every other item of freight off the railroads for a period of nearly ten weeks every year. This illustrates the magnitude of the work before us in supplying the material, to say nothing of the additional equipment that will be required.

In 10 years the number of automobiles has increased from 2,500,000 to over 22,000,000. Motortrucks are today more numerous than all motor vehicles were in 1915.

The number of surfaced roads is about twice as great as it was 10 years ago. During this period it has been necessary to reconstruct and widen a large part of the mileage previously constructed.

There are being built by county and local authorities and State highway departments, in conjunction with Federal aid, about 9000 miles of bituminous, concrete, asphalt and brick highways. There are being turned out by the nation's automobile factories about 4,500,000 cars and trucks a year. If these new cars were all placed in double file on the hard-surfaced roads completed last year, they would be spaced scarcely five feet apart. The sum of \$1,300,000,000, which is spent a year on highways, will not suffice. We must begin to make immediately greatly increased expenditures, running as high as 300 per cent in some sections, if hopeless congestion is to be avoided in the not distant future. Our highway

expenditures will at least have to be doubled in the next five years or we will lose almost as much, because it will be impossible for traffic to move freely and efficiently.

The Charleston Gazette recently stated that "a people can be excused for failing to catch the true vision of the aeroplane. That has not reached the point where it can be said to be practical, except for a limited passenger service and light freight. But the motor car and trucks are now competing with railroad traffic, and anyone ought to see that any city which is on hard roads, that are part of interstate systems, is very shortsighted in failing to put the same store upon that fact as has heretofore attended the building of new railroads into such cities."

As railroad transportation increased, the light railway construction and bridges were rebuilt, and then as heavier and heavier rolling stock was required and traffic increased, the double tracking and still better railway facilities were added. And that is the evolution which highways and motor vehicles are undergoing. First, the building of good roads. Then the present stretch of modern highway construction, with better bridges and better automotive equipment, and later followed by the widening of highways. We are rapidly coming to the time when double tracking of our highway systems will be imperative to handle the motor-vehicle traffic.

Secretary W. M. Jardine of the Department of Agriculture, under which the Bureau of Public Roads operates, recently stated that in contemplating the future he was impressed with the necessity for making adequate provision for the increasing service expenditures of the highways. Great as has been the increase in motor vehicles in the past 10 years, there is no reason to believe that the increase will be abruptly halted, although some falling off in the rate of increase may be expected. Highway service must be capable of expansion to meet the needs of growing traffic, and we can only increase our highway service by spending more money in the building, widening and improving of our roads, which, with the motor vehicle, are becoming the country's greatest transportation medium.

### Operating Costs Over Dirt Roads Very Expensive.

Figures as to the savings possible in operating motorbuses over improved highways as contrasted with operations over dirt roads are given by Helen M. Schultz, proprietor of the Red Ball Transportation Company, Mason City, Iowa, in a letter to the MANUFACTURERS RECORD.

"We have found that the tires on our buses operated over pavement give from one-third to one-half more mileage than those used on dirt roads," Miss Schultz writes. "We credit this to the fact that on a paved road we seldom have any nail punctures, while on earth roads the tires are punctured by sharp stones and other articles. We can get an average of from three to four more miles per gallon on pavement, which is quite a saving when it is considered our buses average around 2300 miles daily. Of course, we have but few mud roads left, as most of the roads are now graveled and paved, but I find driving a bus through a mud road will cost about 50 per cent more on general wear and tear, in addition to the extra gas and oil consumed. The danger of sliding off of muddy roads is great; the public very seldom realizes the circumstances and usually complains of a careless driver or something of that nature.

"We have four Mack buses and three of these have traveled constantly on earth roads, while the other has traveled entirely on paved roads. At the end of a two-year period we find that the body of the one bus operated over pavement is in practically A-1 condition, while it was necessary several months ago to send the other three buses to a body manufacturer for extensive repairs."



# The Highways of Europe.

## ROAD-BUILDING METHODS IN ENGLAND AND ON THE CONTINENT COMPARED WITH AMERICAN ENGINEERING PRACTICE, TO THE GREAT ADVANTAGE OF THE LATTER.

By JOHN N. MACKALL, Chairman, State Roads Commission of Maryland.

[John N. Mackall, one of the leading highway engineers of the country, was one of five delegates appointed by the President to represent the United States at the Fifth International Road Congress held last fall at Milan and at Rome. Thomas H. MacDonald, chief of the Bureau of Public Roads, was chairman of the delegation. The other members were Paul Sargent, State Highway Engineer of Maine; Pyke Johnson, secretary of the National Automobile Chamber of Commerce, and H. H. Rice, Assistant to the president of General Motors. The delegation visited Italy, Austria, Czecho-Slovakia, Germany, Sweden, Denmark, Holland, Belgium, France and England.

The following article, written at the request of the Manufacturers Record, tells something of Mr. Mackall's impressions of his trip, especially as to the roads of Europe and European methods of highway construction.—Editor Manufacturers Record.]

The outstanding impression in my mind, after traveling 5000 miles through France, Italy, Austria, Czechoslovakia, Germany, Sweden, Denmark, Holland, Belgium and England, is the magnificent system of highways being built and maintained in America. I am frank to say that when I started touring Europe I had no idea that I could return with any such impression, but now I have a very definite conviction that the highway program of America has been extremely well administered, and I have unlimited confidence in the ability of the American road builder and the stability of the American road-building program.

I went to Europe sharing the belief with most Americans that the systems of roads in Europe were far superior to those of America; that the Appian Way, built more than 2000 years ago, was still a most excellent road, used every day, and was a monument to the inefficiency of the American engineer. Indeed, I have been asked many times, as, I am sure, have most other American engineers, why it was that the Romans could build a road which would last for 2000 years, and that we were quite proud of our accomplishments if we could build one which would last 20 years. The only answer I was able to make was that the building of the Appian Way almost wrecked the Roman treasury, and that American legislatures would not let American engineers wreck the American treasury. I found that the Romans did not build a road to last 2000 years, that the Appian Way had been entirely discarded as even a location of a road for many hundreds of years, and that the New Appian Way was a more or less third-class road in fair state of disrepair, and that perhaps many Americans in riding over this road had believed they were riding over the original Appian Way. Indeed, one of the outstanding impressions after this trip through Continental Europe was the lack of wisdom in attempting to build a road to last for 2000 years, and I was greatly impressed with the fact that the American policy of building good, travelable roads, and of maintaining them in good condition every day and rebuilding them when rebuilding becomes necessary, is the thing which has made America so far ahead of Europe in its highway-transportation system.

There must, though, be some explanation for the widespread belief in America that European roads are better than American roads. I, however, can find no explanation of it unless we go back to the period prior to the war when France, in particular, and Europe, in general, had fine, adequate roads. Adequate is a word, however, that needs some explanation. They were adequate for the very limited travel on these roads, but even then, I dare say, they would have been inadequate for the roads of America. I think, too, the beauty of the roads of Europe, as differentiated from their travelability, has led many Americans to speak of the fine roads of France. What I think they really mean is the beautiful roads of France, the picturesque roads of France, and not the travelable roads.

The system of roads laid down by Napoleon—and I hope

here to impress the differentiation between a system of roads which has been laid down and co-ordinated and one which is maintained in good condition for travel—were laid down with arrow-like precision, of ample width both of traveled way and of right of way, planted with magnificent trees, well cared for and co-ordinated with the second and third class roads. These certainly gave the appearance of a beautiful system of roads, and for the traffic to which they were subjected prior to the war, mostly animal drawn, they were a most excellent system. Their surface treatment of these macadam roads was very well done, and for slow-moving vehicles the roads had the appearance of being good roads. Had these roads, however, at that time been subjected to the rapidly moving passenger vehicles and heavy freight vehicles, they would not long have been considered good roads.

For so many years in America we have been considering good roads as good motor roads that few of us can remember when a road satisfactory for animal-drawn traffic was considered a good road. Because of the vast predominance in all sections of the country of motor traffic over animal-drawn traffic, we have come to consider good roads only as good motor roads. Naturally, this condition would not obtain in Europe, because, except around the very large cities, the automobile traffic is extremely limited; in fact, traffic of any kind is limited as we know traffic in America. As an illustration of the limited number of automobiles in Europe, France, for instance, with nearly 40,000,000 people, has but 700,000 automobiles; Germany, with 62,000,000 people, has about 300,000 automobiles, and Italy, with 43,000,000 people, has but 70,000 automobiles. Contrasted with this, the little State of Maryland has as many as Germany, nearly one-half as many as France and four times as many as Italy. There are many parts of Europe where even horse-drawn traffic is very light. Donkey carts and goat carts on many of the roads far surpass in daily traffic the number of automobiles using the highways.

When we consider that the military roads, laid out for the most part by Napoleon to give access to his vast Empire, were of large proportions, with ample width and ample length, constructed of stone to a depth in many cases of as much as four feet, and in all cases with a depth of not less than two feet, and when we consider that it is only necessary to have these roads smooth enough for very slow-moving animal-drawn vehicles, Europe did have a fine system of roads. Further, when we consider that during the period prior to the war, when America had few roads of any considerable length, and when our main roads were poorly laid out and were not co-ordinated in any system at all, and the right of way was narrow, I admit that then it was quite easy for a person to believe the European system of roads was far superior to that in America. As a "system" it was, but even then, as roads over which motor vehicles might travel at relatively high speed, our system of roads was much more travelable than was theirs.

However, with the laying out and construction of the

7 per cent system demanded under the Federal-aid Act, and with the construction of many miles of good smooth roads in the United States, America is now far ahead of Europe in any way in which we choose to measure a system of roads. In America we always measure it as a means by which a person might drive a motorcar from one place to another where he desires to go, and no system of roads is going to be considered a good system in America until a traveler may go where he pleases and when he pleases on a road maintained in good, smooth, serviceable condition every day in the year.

Indeed, Europe's problem in comparison with ours is extremely simple, and I feel that Europe's progress in building good, serviceable roads is going to be very great in the next 10 years. Europe's roads, constructed as they are of stone, have suffered very little from the traffic in the period of the war and the reconstruction period that followed it. They have suffered little because of the very limited use made of these highways. Roads, no matter how well constructed, having been left for this length of time without repair, if subjected to the motor traffic we have in America would long ago have ceased to be roads at all. They would have completely disappeared as such. The construction of these roads, then, does not begin to present the engineering or economic problem that confronted the American road builder. Here in many places we had to provide new and additional right of way, we had to do extensive grading, drainage and bridge building and build entirely new surface from the ground up. Everywhere in Europe their main roads are of ample width, excellently laid out, thoroughly drained and all with a foundation sufficient to carry any load to which they are subjected. They only need to place on these roads a good, smooth, serviceable top. This has been done economically and satisfactorily in America.

Europe's greatest problem, then, is really one of education, and because we have so long looked at education as a matter of advancing thought, it can scarcely be considered the right word. Yet what Europe does need is to educate its population to believe that it does not care at all what type of road it rides over, that it is only interested in having good, smooth, serviceable roads which can be used every day in the year and with any type of vehicle which it is economical to use. To do this, however, is not an easy matter. All of Europe has for so many generations looked for permanency in construction of every kind. No peasant is so poor that he is willing to build a house which is not of the most durable type, one which he thinks will last always. The idea of building roads which are going to wear out, to be rebuilt again, affronts the very nature of the European, and yet, as I see it, their road-building program cannot go ahead until this point of view is obtained.

In every European country visited we found them constructing experimental roads to determine which best suited the needs of the community, but always their experimental roads were of the highest type of construction and they were looking for the best of American practices and best of American methods in the construction of these experimental roads. They say they cannot build the roads as we build them in America, and yet they are not seeking to find the best answer to their transportation problem; they are seeking only to find the most durable type of pavement. In a number of cases we found them constructing concrete base with a bituminous top of cement concrete on perfectly good stone base to a depth of four feet, much greater than is needed to carry all the traffic which will ever come over these roads, and I dare say at a cost four to six times as great as the cost of building just as good a road by surfacing the old base with macadam, using a bituminous surface treatment. No nation is so rich that it can economically afford anything four times as great as the actual cost should be.

What Europe needs is many miles of good roads. Europe's

limitation is funds with which to build them. How, then, can they justify building what they call permanent roads, which are, in fact, no better for the traffic to which they will be subjected than would be waterbound macadam roads surface treated? The annual cost of keeping these roads in most excellent condition for many years is going to be in many cases one-quarter or at most one-half of what the interest charge alone will be on the new type of pavement. We have demonstrated quite conclusively in Maryland that waterbound macadam roads surface treated will carry very heavy traffic at very low costs. It is my judgment that none of the main roads of Europe will develop sufficient traffic in the next 10 years to warrant a type of pavement higher than waterbound macadam surface treated.

This becomes especially true when we consider that in every case there is ample base and in most cases the wearing surface is in sufficiently good condition to require only the minimum of patching and of resurfacing before the road itself is ready for surface treatment. To my mind, the outstanding need in European road building is the realization of the value of the base already existing and of the surface that can go over this with so-called low-type construction.

Berlin presented an outstanding example of Europe's desire for permanency. The asphalt pavements in that city are for the most part built of rock asphalt and are very hard. Because of this they were slippery in wet weather, and I presume in all kinds of weather, so that the police ordered steel-studded tires on the wheels of motor vehicles. In the combination of steel-studded tires and hard-asphalt pavement they had almost reached the everlasting tire and the everlasting pavement, and in doing so they had materially shortened the lives of the occupants of the cars which rode over them. Steel-studded tires polish the surface of the asphalt until it is smooth, shiny and slippery as glass; pavement over which it is extremely hazardous to ride in dry weather, and during a rain a car is almost without control. The one in which I was riding actually would slip from the curb on one side of the street to the curb on the other, traveling at a speed not greater than 10 miles an hour. Fortunately, there were no other motor vehicles with which we could collide, and this served as a demonstration of the inconvenience of this type of pavement for any highway use. The safety of a pavement depends upon its ability to wear; the safety of a motor tire upon this pavement depends entirely upon its ability to wear. It is the wear of the pavement and of the tire which makes for safety, and safety is the thing most needed in the operation of the highways. This feature, however, seemed never to have occurred to those in authority in Berlin, and we used our best efforts to impress upon them the necessity not for a permanent pavement, but a pavement which would wear and which at the same time was safe for use.

Another outstanding impression of conditions in most of Continental Europe was the lack of co-ordination of the vehicles and of the highway, and the lack of co-operation between the road officials and motor manufacturers, importers and dealers. America's real progress in constructing a United States system of highways came only after the motor manufacturers and highway officials began their co-operation. I can remember when there was no more co-operation between these two groups than there is in Europe today, and I can remember when America's highway program was perhaps more unsatisfactory than is Europe's today. The beginning of real highway progress in America dates precisely from the time that the motor-vehicle manufacturers and the highway engineers realized they had a common problem, that each group in itself was doing nothing, but that the co-ordination of their efforts in highway transport was the thing for which the public was paying and the thing which the public had a right to expect.

I have never seen as public-spirited a group of men as are



the motor-vehicle manufacturers of America. I have seen them voluntarily curb the size of the vehicle which it might have been economical for them to build to the size which the American road builder said could be carried on the American highways. I have seen them advocate the taxing of motor vehicles sufficiently to pay three-fourths of the entire road-building program of America. Some may say that they have done this for selfish reasons, some may not. From my own experience with the motor manufacturers I feel that they were genuinely interested in highway progress in America, that they were willing to forego any other thing to bring this about, that their hope for reward could only come in the more extensive use of automobiles by the public, and they have done everything possible to secure this result. Indeed, I think there is no example in America of co-operation between the manufacturer and the public official as great as that now existing between the motor manufacturers and the highway engineers; I have seen the highway program go rapidly since this co-operation, and I saw it fight for its existence prior to this co-operation. Indeed, it makes little difference whether Henry Ford's belief that cheap automobiles brought good roads, or Ed Hines' belief that good roads brought cheap automobiles is correct. The facts are that good roads and cheap automobiles have done so much to bring about the great prosperity of America that there is certainly glory enough for all.

In America we look upon the automobile as a vehicle of transportation. In Europe it is not. If the Governments look on it at all, it is as a vehicle for taxation. No real progress is going to be made in highway transportation until the Governments of Europe look upon the automobile not as a luxury of the rich to be taxed, and taxed again, but as a vehicle of transportation. When they get this point of view, they are going to see that highway transport is so intimately linked with their prosperity that they cannot afford to neglect it, much less disregard it. I feel sure that when the people of Europe have seen the effect of individual motor transportation, have felt the power and safety constructed in an American motorcar, and have seen the necessity for intercourse and commerce, and how closely they are linked with their prosperity, they are going to demand good roads and good automobiles. Perhaps by this time the Governments of Europe will realize that the large volume of taxes is going to come not from the extremely high taxes on the individual car as exist at the present time, but from the aggregate of small levies on many automobiles.

Europe seems to envy American prosperity. They do not, however, envy America's ability and determination to succeed by hard work. To those of us who have watched the growth of the motor industry must come the conclusion that there is a very definite relation between prosperity and motor transportation. I believe we can trace a great deal of our prosperity to the use of the automobile, and, further, that Europe is not going to enjoy this prosperity until it has a fine transportation system and until the automobile is used as an economic necessity.

Except in a few cases, we found the people in charge of the road building in the several countries not particularly interested in continental transportation. For the most part they were thinking of roads for their own State and for rather limited areas around the big cities. Some of the more farsighted ones were thinking in terms of continental roads. This is not greatly different from the situation which existed in America a few years ago. The road movement was given its impetus as roads for a single State, but soon it became apparent that what was needed was a continental system of roads, and the results accomplished in America in co-ordinating the State highway systems into continental highway systems under the most able direction of Thomas H. MacDonald, chief of the Bureau of Public Roads, demonstrate that there

is no inherent difficulty in co-ordinating State systems into continental systems. The Europeans, when their road program gets started, will see the necessity of co-ordination of the systems of the several States, and I think they are going to have no more difficulty in agreeing as to where connections should be made than we have had in America. Nothing, in my opinion, will do as much to bring about better feeling between the several countries of Europe than continental roads, over which people of one nation may and will visit those of another. I believe the people of Europe cannot hate another people if they will mingle with them, if they will visit among them and if they will exchange intercourse and commerce, as is bound to follow the general use of motor vehicles.

In England the condition of their roads and the number of improved roads are quite different from those of Europe, but the failure of the English to use their highways as we in America use ours more nearly parallels the conditions of continental Europe. An outstanding impression of the roads of Europe was the lack of traffic on them. The English roads are well constructed and well maintained and in very good condition, but their right of way is narrow and their alignment is poor, resembling more nearly our New England conditions than those of Europe. England has one linear mile of road for each square mile of area. Maryland, one of the best road States in the Union, with more than 18 per cent of its total mileage improved, has only one linear mile of road to each four square miles of area. On Sundays and on weekdays the main roads in England carry less than one-third of the traffic our main roads in America carry, which seems to demonstrate that England has not yet begun to make such use of automobiles as we have in America. They are used, when necessary, for business, but as a means of transportation from one place to another they are used almost not at all. The bus system in and around London is much more highly developed and much more extensive than the bus system in America, but they don't go in for individual transportation.

The Ministry of Transport in England is doing most excellent work in the construction of new roads to relieve congestion, sometimes paralleling the old ones, and sometimes bypassing the cities and in other cases constructing arterial roads around the city and radial roads leading to them, but England's policy of building is quite a contrast to the policy of building in America. They build according to their traditions and their belief and not in accordance with American practices. These new roads, which we visited, were constructed on chalk or gravel sub-grade, as firm as that existing anywhere in America, yet they were excavating for a depth of 24 inches, filling in 12 inches of brickbats, perhaps one-fourth as good as the sub-grade material which they had excavated, and then covering this with 9 inches of concrete and 3 inches of asphalt, making a pavement 24 inches in depth, the cost of which was perhaps three times the cost of building a similar road in America, and for our traffic very likely not as good. They apparently have not learned the advantage to the road itself, not to speak of the advantage to the user, of smooth-surfaced roads. They rely upon the road's depth to absorb the impact instead of building the roads smooth enough to prevent the impact from coming.

Again, let me say that from my observations of the highway transportation systems of continental Europe and England I have a supreme confidence in the stability of the American road-building program and in the ability of the American highway engineer. I think he has done a much better job than he knows, I think he has added much more to the wealth, prosperity, happiness and joy of living in America than he knows, and that he can afford to look any man in the face and say that no class of work has produced more of the things worth while than has the work of the American highway engineer.

# Remarkable Development of Motor Transport for Passengers and Freight Throughout the South.

By JAMES W. BROOKS, Director, American Highway Educational Bureau.

Profit and pavement run parallel. And yet, despite all conjecture to the contrary, the value-creating powers of the modern highway, with its automotive equipment, cannot be told in figures. At best it can only be estimated; in testimony whereof may be called to notice unexpected developments, more particularly in the States of Maryland, Virginia, Kentucky, Tennessee, the Carolinas, Georgia, Florida, Alabama and Mississippi—ten States that constitute an empire in themselves.

The first of these unexpected developments in recent highway history is found in the highway passenger line, commonly called the motorbus. In the South this new agency in public service had reached a high mark as late as two years ago, but since that time its equipment and mileage operation have more than trebled.

The second development, which contains an element of surprise, is the unexpected and, as yet, scarcely realized earning power of the highway when paved in continuous and connected stretches so that this new factor in transport may move upon dependable and unhindered schedule.

It does not take a field glass to see what is happening in the South, nor why, particularly in the realm of transportation. Serving a land area of about 425,000 square miles in the 10 States named above are approximately 45,000 miles of steel track. This mileage has remained stationary for a decade or more, with one or two exceptions. Any further large extension of this mileage is blocked by economic forces, but the growth of transportation needs has not remained stationary—not in the least. This means that a lighter and less expensive type of rolling stock must be used to get into areas economically beyond the reach of the steel rail. That new type has been found in the motorbus and the paved road, and the rapid rise of this combination is due to public demand, and that alone.

The unexpected in this road-building period is that such a thing as a regular highway passenger business would grow out of it. Such a service has been made possible and profitable by improved roads, and this new utility in the South, as elsewhere, in its relation to the railway may be likened to the sickle that cuts the grain in the field, for it is the one

agency that promises to garner increased tonnage for the railway.

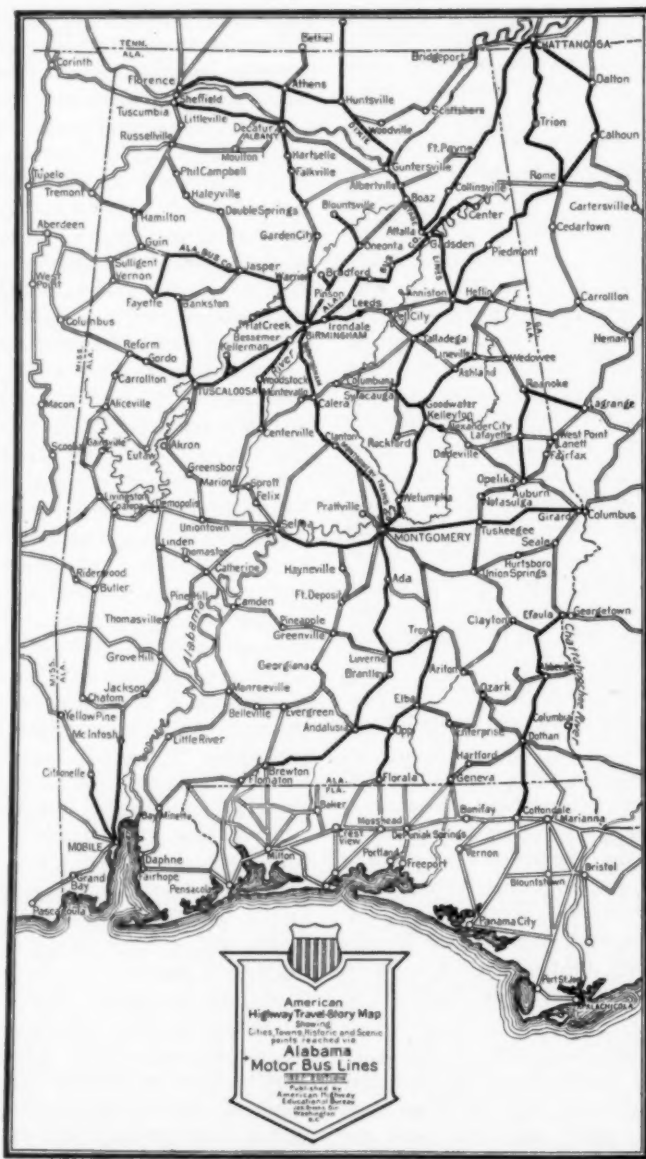
One need not go into details bearing upon this development in the South beyond taking note of the fact that the number of highway passenger coaches is steadily increasing; that highway union depots are already established in most of the large cities—one of the best examples of which is found in Baltimore—and that a nationally known railway car-building concern with a record of many successful years behind it has entered the highway coach-building field and has established its Southern offices in Chattanooga to better keep pace with requirements in the South.

As straws in the transportation wind, so far as it affects the South is concerned, the trend toward enlarging the functions of the highway is self-evident. Intercity business is increasing, more commercial territory is being covered by the use of the motorbus, effecting a saving in both time and money, and this form of transportation—coupled with the motortruck—is affording industrial plants an opportunity to get out into open spaces where ground is cheaper than in the cities, with the logical result that realty values are thus distributed over a wider area.

The acreage of potentially rich territory which is thus opened up by motorbus and truck lines is a matter for statisticians to figure out, but it requires very little figuring to discover that highway freight and passenger operation over 15,000 miles of main highways means a speeding up of trade and travel, with possibly 20,000 more miles of main State highways to go under motorbus permit within the next two or three years. Back of this main mileage are the thousands of miles of local roads yet to be included in the routes of passenger and freight carriers. How

far these operations will reach into less-traveled roads is, of course, mere conjecture, but one point of interest to note in this connection is that bus and truck builders are fitting their product to a wide range of traffic, which in itself speaks economy.

The whole force of economic advancement in rural transportation, it appears, is being thrown behind the motorbus and freight truck, and it would be more than a dream to





expect any other agency than the paved road and its automotive equipment to produce the results desired in widening and stabilizing trade zones beyond the immediate and economic reach of the railway.

North Carolina found the key to prosperity through the building of improved roads, and as one direct result that State now has one of the finest and best appointed highway passenger systems to be found anywhere. Alabama, it is confidently expected, will carry out another lap in its road-building program by the passage of another \$25,000,000 bond issue—a program which will be backed by the new Governor, Col. Bibb Graves. The advancement of motorbus transportation in that State is strikingly illustrated by a State highway passenger map which the Alabama Motor Carriers' Association recently had prepared. A similar graphic illustration of the growth of bus transport is shown in a highway pas-

senger map recently issued for the States of Maryland and Delaware. Similar maps are being prepared for Kentucky, Tennessee, the Carolinas, Georgia and Florida in response to gradually increasing demands for information concerning highway passenger routes and schedules on the part of the public.

These are but a few of the developments that serve to impress upon the public and legislative mind the fact that the extension and permanent establishment of highway passenger lines is going to prove an important factor in the full development of the South, and that as such just consideration must be given to it as a new servant in manufacture and trade, as well as a builder of community values.

With rail lines fixed and a vast territory yet to be developed, no other agency in transportation at the present time holds so much promise for the South.

## Federal Regulation of Motorbuses and Motortrucks Unnecessary.

By C. C. McCHORD, Formerly Chairman of the Interstate Commerce Commission.

This has been called the mechanical age. It might more appropriately be called the era of the automobile. By devising the gasoline-combustion motor and mounting it on rubber-cushioned wheels, man's ingenuity has found a way to use the destructive force of exploding gas and air. Thus he has been able to place nearly 20,000,000 motor vehicles on the streets and highways of this country and to make these the servants of all classes—the rich, the poor, the city dweller and the farmer.

The almost magical development of the automobile industry from four cars in 1896 to a number which today could carry the entire 110,000,000 population of this country has brought to public attention many problems. One which now is of nation-wide interest is whether there should be Federal regulation of the motorbus and the motortruck.

This question has become the outstanding point of discussion as the result of recent decisions of the Supreme Court of the United States.\* In these it is held that a State cannot prevent a common carrier by motorbus or by motortruck from operating in interstate commerce on the public highways where the refusal of the State to permit such operation is to prevent competition with existing transportation agencies. A State's refusal to issue a certificate of convenience and necessity to a motor carrier under these circumstances is declared by the Court to be an invasion of "a field reserved by the commerce clause [of the Constitution] for Federal regulation."

### The Field Excluded From State Regulation Is Relatively Small.

At the outset, however, it should be observed that the Court in those decisions recognized that comprehensive and important powers having to do with "safety upon the highways and conservation in their use" could still be exercised by the States in respect to interstate motor vehicles, as well as those which are intrastate. Thus the States can make regulations governing the speed of such motor vehicles, the kinds of headlights, the maximum loads to be carried, etc. Such regulations, of course, are subject to the limitation that they must not unreasonably burden or obstruct interstate commerce.

It is clear, also, that the States can tax, and are taxing, motor vehicles, whether used in interstate or intrastate

commerce. The vast sum of nearly \$700,000,000 is paid annually by the 20,000,000 motor vehicles. In passing, it should be noted that motorbuses and common-carrier motortrucks pay from two to three times as much in taxes as the private vehicles.

Thus it is clear that in matters of vital concern to the public the States can function in the absence of any Federal law.

Now let us examine the Federal field, which the Supreme Court has said may not be invaded by the States. The principal question to be dealt with in that field is one of competition. For example, if there are railroads or motorbuses or motortrucks already operating between two points in interstate commerce, should the Government step in and say that no new buses or trucks can operate unless a certificate of public convenience and necessity is obtained, or should free competition be preserved, with full opportunity for improved service and better facilities?

This is fundamentally a problem of public interest and should be solved alone from that standpoint.

In considering this Federal question it must be borne in mind that after all there is relatively little traffic that will be subject to regulation. We can exclude at once the private passenger car. This will eliminate approximately 17,500,000 of the 20,000,000 motor vehicles. We can also exclude 27,000 school buses and about 2500 sightseeing buses from the total of 60,000 to 70,000 in this country. This will leave only 30,000 to 40,000. Of these only about 5 per cent are interstate motor carriers. As to the approximately 2,500,000 trucks thus remaining, Government studies have shown that not over 15 per cent of the total daily truck movement is interstate, and that only 1 per cent is by common carriers.

Private carriers, it seems to be conceded, should not be subject to regulations designed to govern competition. Even if an attempt were made to regulate such carriage it would clearly be in violation of private rights guaranteed by the Constitution.

Movement by motortruck, it is important to note, is essentially a matter of local concern. Government investigations show that 80 per cent of the traffic by motortruck moves 30 miles or less. Where common carriers are operating over the highways, private motor vehicles, including contract-carriers, may and do follow the same routes and yet are not, and cannot be, subject to regulation.

In view of the limited field of motorbus regulation which the States cannot invade, students of this problem may well

\*Buck v. Kuykendall, 267 U. S. 307; Bush Co. v. Maloy, 267 U. S. 317.

ask themselves if there is any necessity at all for Federal regulation.

### Motor Vehicle Vital in Our Scheme of Public Service.

The American public demands service. They have found it in the motor vehicle. What better evidence of this than the number now in use!

A few years ago the farmer spent the day driving his horse and wagon to town and back, a distance perhaps of only 10 or 12 miles. Today, with his automobile or motortruck, he can make the trip in less than an hour.

The motor vehicle has revolutionized industrial and social life. It has made possible the remarkable suburban development throughout this country. It has shortened the time of the laborer and business man in going to and from work, and has afforded greater opportunity for recreation and rest—prerequisites of efficiency. It has been of incalculable benefit in breaking the monotony of industrial and household duties.

The motortruck has displaced the slow-moving horse and wagon. Unlike the locomotive and street car, it can go anywhere. It saves the public in packing expenses and cost of rehandling. And through the dependable and flexible service which it gives, merchants and manufacturers are able to reduce their inventories and thus avoid the enormous charges incident to the accumulation of idle supplies.

Automobile manufacturers have brought forward the bus, a vehicle which can be and has been made comfortable, safe and commodious. With the appearance of these new cars, the public has found that they perform a special type of passenger service which neither the rail lines nor the private car had been quite able to furnish.

The motor vehicle has been of great assistance to the railroads. It has opened up to them areas of traffic which were previously closed. It has expedited loading and unloading of cars; has relieved congestion at terminals; has carried almost entirely the short-haul traffic which the railroads generally regard as unprofitable or at least hardly remunerative, and has released railroad equipment for long-haul traffic. Eventually, the use of the truck will mean that railroads will establish freight terminals at the outskirts of cities instead of in congested sections where land values are very high.

It is significant that there has been a substantial increase in railroad net earnings each year since 1920 and that all previous traffic records have been broken this year.\*

Many railroads are using the motor vehicle as an adjunct to their business. Fifty-one railroads in the United States and Canada are using motortrucks to supplement their shipping service. Thirty-one, or their subsidiaries, are using 407 motorbuses, and 190 steam and electric railroads are using over 496 gasoline or gas-electric rail motor coaches.

### Federal Regulation Unnecessary at This Time.

The States, as previously pointed out, have ample authority to make regulations having for their purpose safety on the highways and conservation in their use and to levy appropriate taxes.

Why should there be further regulation? Certainly the public is not seeking it. The carriage of commodities over the highways is a special service which cannot be performed by any other agency and which the public itself has built up and is maintaining as part of its method of conducting business.

The common carrier motortruck cannot obtain a monopoly because it operates over a highway which is free to all; because its cost is so inconsiderable that competition is assured, and because private owners or contract-carriers, whose rights cannot be restricted under the Constitution, are always in the field.

The common carrier motorbus is in a somewhat different

position. The people who use it do not own it. They could rarely afford to go out and buy a private car if the bus rates were too high. Fixed termini and definite schedules are essential to successful operation. However, the number of passengers moving in common carriage are almost infinitesimal as compared with those transported in privately owned passenger cars.

Can it reasonably be said that the common carrier bus has developed to a stage to make regulation successful and constructive? The art of bus manufacturing is still developing. All of the basic principles of operation are not yet fixed. The period of trial and error has not yet passed. The maximum of public service has not yet been reached.

In considering the whole problem sight should not be lost of the fact that enormous investments have been made in the motorbus and motortruck. The total investment may be conservatively stated at \$15,000,000,000.

Too much emphasis cannot be placed on the fact that the problem of regulation is essentially local. It is fundamentally a matter for the States to handle. Even where Congress has seen fit to exercise its powers under the commerce clause in respect to railroads it has excluded local instrumentalities such as street railways.\* It has not attempted to control competition on the waterways through the issuance of certificates of convenience and necessity or otherwise.†

The local character of motorbus and motortruck operations and the peculiarities of such operations make it well-nigh impossible for a Federal agency in Washington to make regulations which would be satisfactory to the Government, to the States or to the public generally.

The railroads are supreme as to long-haul traffic. What is needed is co-ordination of railroad and motor vehicle, not stifling of competition. As to making regulations to protect the railroads, A. G. Patterson, president of the National Railroad and Public Utilities Commissioners, in addressing members of that association recently at Asheville, N. C., has admirably stated the situation in the following words:

"If we say that motor-vehicle transportation should be denied because the rail carrier in the territory can carry all the persons and goods offered and hence should not be injured by such competition, when such motor transportation will be more convenient, more satisfactory and more economical, by the same token we should forbid the sale of electric lights because to permit it will injure the manufacturers of candles and oil lamps.

"The people are entitled to the benefits that will accrue from improved highways and the development of the motor vehicle just the same as they are entitled to the benefits accruing out of the advancement of science in any other field. If the railroads are confronted with a new problem in the form of this motor-vehicle competition, then it is their task to solve the problem so far as it affects them, not to ask the people to solve it by prohibiting or strangling the motor-vehicle business, if that is found to be an improvement upon previously existing transportation agencies, but solve it by improving their own methods of transportation so as to minimize as far as possible the advantages existing in favor of motor-vehicle transportation.

"The man is foolish who holds the view that regulation should be exercised in such a way as to deprive the people of any better, more convenient or more economical method of carrying on their affairs."

There is no necessity now for Federal regulation. No embargo should be permitted against the use of the motor vehicle. There should be no regulation until need for it is clearly demonstrated in the public interest.

\*Omaha and Council Bluffs Street Railway Co. v. I. C. C., 230 U. S. 324.

†Shipping Board Act, September 7, 1916.

\*Fortieth Annual Report of the Interstate Commerce Commission, December 1, 1926.

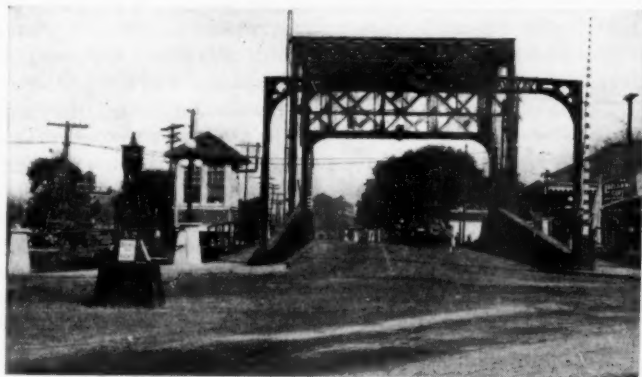


# Factors for Consideration in Bringing Safety to Highway Transportation.

By CARROLL E. WILLIAMS.

The problem of making the highways safe is one of the greatest the highway engineer and road builder faces today. A discussion of this subject lends itself to two general divisions—first, the building of highways that are accident-proof so far as it is reasonably possible to build safety into the construction, and second, the use of such highways in a safe and sane manner. An examination of present conditions indicates that much more has been accomplished along the line of the first than in the second division, but much remains to be done with regard to both.

A report by the United States Bureau of Public Roads lists as among the principal features to be considered in highway design the following: Blind curves and road intersections,



Traffic signal placed on concrete base at intersection of streets, New Orleans, La.

sharp curves on embankments, unprotected embankments, narrow bridges, sharp convex, vertical curves, slippery road surfaces, steep grades, narrow road surfaces, low or rough shoulders, steep crowns, sharp curves at bridge and underpass approaches, grade crossings and unsuper-elevated curves. Through its highway department practically every State has adopted a set of minimum requirements with regard to these features.

A sight distance of 350 feet ahead on curves is considered as about the least countenanced by good practice. Sometimes it is necessary to remove buildings, cut down trees, make additional excavation in the bank of cuts, etc. The same protection is often provided at road intersections, and at least one State is now considering legislation to require traffic entering a primary road from a secondary road to first come to a full stop.

Curves should have a radius of not less than 200 feet, except in mountainous sections where this is impossible. Some States attempt to set a minimum of 1000 feet. Sharp curves on embankments of any height are avoided wherever possible.

Guard rails on fills and steep hillsides are perhaps the most evident of the protective measures. They not only give to the driver and passengers a feeling of security, but the best types are capable of withstanding the shock of the ordinary motor vehicle. Several types are widely used. About the best known consists of timber posts, with rails nailed or bolted on. The lower rail is set at the height of the average hub cap to turn the vehicle back in the road. Another type consists of two wire cables strung through posts of either concrete or wood and firmly anchored at each end. A number of States are now using a specially fabricated wire fence, which absorbs an impact in much the same man-

ner as the safety net catches a trapeze performer. Other devices are walls of stone, brick and concrete, earth embankments and different forms of timber fences.

One-way bridges are protected to some extent by warning signs, but on main traveled routes these structures are being replaced by two-way bridges.

Ample sight distances at the top of hills prevent many accidents. Several years ago Maryland spent \$17,000 to eliminate a location involving dangerous grades and curvature between Baltimore and Washington, which had a record of hundreds of accidents and many deaths.

Most types of road surfaces are productive of annoyance or danger at times, and among them may be pointed out: Dust, loose gravel, road oil and fresh tar, and surfaces that are slippery when wet or lightly coated with frost, sleet or snow. Applications of road oil or calcium chloride on surface treatment commonly eliminate dust. Non-skid chains have usually proved effective against skidding. In some cities, particularly where large numbers of buses are operated, specially constructed automobile trucks are used to sprinkle dry sand upon the streets following light sleet and snowstorms.

Steep grades are avoided wherever possible. Most States now limit grades to a maximum of 6 or 7 per cent under ordinary conditions, and permit at times 8 or 9 per cent grades in mountainous sections. Aside from the safety fea-



A wire rope guard fence, one of many types in use.

ture, considerable expenditure in reducing grades is justified in keeping down gasoline consumption where the traffic is heavy. Proper drainage facilities reduce the danger from destructive erosion of the embankment.

Building roads sufficiently wide to meet the demands of

traffic is perhaps of more importance than any safety feature mentioned thus far. On narrow roads there is a dangerous crowding to the center, as the average driver instinctively avoids the edge of the road. In 1925 the Bureau of Public Roads made observations on a number of highways near Washington and found that most drivers kept the machines  $1\frac{1}{2}$  to 4 feet from the pavement's edge. For separating the traffic on curves, tops of hills and other dangerous points white center lines have come into general use and are very effective, and one highway engineer says this has the same effect from the standpoint of safety as two feet of additional width.

On the great majority of our rural roads connecting community centers 18 feet seems to be a sufficient width, unless there is heavy truck traffic, when a width of 20 feet may be used. In the vicinity of many large cities more than two lanes of traffic must be accommodated. Three-lane highways are being tried in several places, the outside lanes being used as on ordinary roads, while the middle lane is used for traffic toward the city in the morning and for outbound traffic in the evening. There is, however, a difference of opinion as to the value of such a road, and some authorities recommend wide two-lane or four-lane highways.

Many accidents are caused by low and rough shoulders and rough spots in the road surface, particularly near the edge. These conditions may be eliminated by proper maintenance. With the general establishment of maintenance departments, with special funds available for the work, the situation has greatly improved in recent years. A number of States have placed concrete shoulders, two to four feet wide, on each side of existing highways, and this has materially reduced accidents and facilitated the movement of traffic. Other States are maintaining in good condition the earth shoulders along improved highways for the full width of the right of way.

Elsewhere in this issue particulars are given concerning the plans that are being discussed to promote safety and at

overpasses. Big sums are being expended in many cities for the elimination of grade crossings. Greensboro, N. C., has adopted a program involving the expenditure of \$1,000,000 to eliminate every grade crossing in the city by the construction of underpasses. Several States have passed laws requiring all vehicles to come to a full stop at grade crossings.

Unsuper-elevated curves cause accidents by fast moving vehicles leaving the roadway, but more often because of drivers on the outside of the curve crossing to the inside on account of the favorable slope and thereby colliding with vehicles moving in the opposite direction. Curves are being banked on practically all new roads, and are being widened and banked properly on existing roads. The banked curve, with straight slope from the inner to the outer edge has been found most satisfactory.

In order to determine danger spots in the road system many States now maintain a system of tabulating all highway accidents. The Maryland State Roads Commission has a large State map, and as motor accidents are reported a pin is inserted at the location. A clustering of pins at any location indicates that correction is necessary. Each year improvements are made at many points, and undoubtedly many accidents are prevented as a result of this plan. Colored pins may be used to designate various types of accidents.

The importance of securing adequate right of way that may be needed for reasons of safety or to care for increased traffic, or, in fact, for any purpose, cannot be too strongly emphasized. Property development may so increase land prices that changes now possible may be impossible in the future. An American highway engineer just back from England reports their roads strikingly different from ours as to curvature, directness of route, width of right of way and other features, all because of the dense population existing prior to modern road improvement there. No satisfactory solution is now apparent for this condition.

Highway signs play an important role in making the highways safe. On old roads, not up to the new standards and



Underpasses similar to the types shown above are being built in large numbers to eliminate railway grade crossings in the South.

the same time permit of the efficient operation of motor vehicles under the subject, "Some Requirements of the Highways of the Future."

Railway grade crossings take an annual toll in deaths which is appalling. Much is being done to remedy the situation, but millions of dollars more must be spent for work of this character to speed up traffic and reduce accidents. This is done by locating the road to avoid crossing the tracks or by passing over or under the tracks. In one Southern State on a 15-mile stretch it was found possible to eliminate seven crossings by keeping the highway on one side of the tracks. About 259 grade crossings were eliminated on Federal-aid roads in 1925, 172 by relocation, 46 by underpasses and 41 by

of which there is a big mileage, they are the sole protection of the traveler on a strange road against potential dangers. Even on the newest types of roads they are indispensable, for there must be road intersections, curves and grades steeper than ordinary, and other places where the autoist must proceed cautiously.

A great step forward was recently made in the standardization of highway warning and guide signs. The Bureau of Public Roads in co-operation with the State highway departments has adopted a group of uniform signs, which it is believed will soon be used throughout the country. Twenty States report that their United States highways are completely marked, the work is partly complete in 14 others



and six additional States may install the new signs this year.

When all States use these signs the motorist will not be confused by a variety of signs of all designs and types. Hazards will be indicated by signs which will be uniform in all States. To make them effective at night the signs are made in various shapes indicating the degree of hazard, and although it may be too dark to read the legend the shape



The center suspension type traffic signal, hung either from cables or mast arms above the street intersection, is apparently the most favored.

will adequately warn. Three classes of signs have been adopted. First, a standard shield, to be used only on United States highways, which will bear the number of the route on which it is placed, and all other route designations will be removed. The other two classes will be the warning signs on a yellow background and the guide signs designating towns, river, etc., and giving distances. A round sign indicates a railroad crossing, a diamond-shape sign calls for a reduction in speed, an octagon indicates a complete stop or the necessity for proceeding slowly with car under control, a square sign indicates a lesser degree of caution than any of the others.

Vigorous campaigns to outlaw roadside advertising signs and billboards are under way. It is pointed out that if a sign does not attract attention it is useless, and if it does attract attention it is dangerous. The users of the highways pay for them; the owners of the signs contribute nothing toward the improved roads, but seek to capitalize for their profit the increased travel created on improved highways. The main reasons urged against the roadside advertising sign are: (1) It is ugly and despoils the beautiful natural scenery; (2) It is an infringement upon the rights of the public to the fullest enjoyment of outdoor beauty, and (3) It is a menace to the safety of the traveling public.

A Maryland law prohibits signboards or signs on a public right of way. The law does not attempt to prevent the erection of roadside signboards on private property. The value of a signboard lies in its visibility to the people passing along its highway. By planting trees along the highway, at proper intervals, the unrestricted view of the signboards will be cut off and gradually their use will be made unprofitable and in time, perhaps, result in their elimination.

Reckless driving is undoubtedly the most serious factor affecting highway safety. Measures already taken have kept the situation from being far worse. Highway police forces, such as are maintained in New York, New Jersey, Pennsylvania, Maryland and other States, are very effective in enforcing highway regulations.

Most States now compel applicants for a license to operate a motor vehicle to submit to an examination, but certain advances can well be made in the effort to raise the standard of driving.

Highway regulation, or control over the manner in which the highways shall be used, is of equal importance to safety features connected with highway design and construction, but space limitations prevent its discussion at length here. It should be stated, however, that there has been a great diversity of practice in different States, including variations in

speed limits, signaling practice and other rules of the road. Our main highways have become of more than local importance and they are carrying interstate traffic in volume; therefore, highway regulations should be of a uniform character throughout the country. The American Automobile Association is attempting to have a uniform signal system for motor-car drivers adopted; this move has reference to the driver who gives a signal for the benefit of those behind him. At the recent Hoover Conference on Highway Safety a code of uniform practice in highway regulation was laid down.

"Traffic-control engineering is perhaps the largest specialty in civil engineering," says Roads and Streets, a Chicago publication, in a recent editorial. "It has long had its counterpart in the railway field. \* \* \* Since there are twelve times as many miles of country roads as of railroads, and since motor cars and trucks move with an average velocity exceeding that of the average train, and since there are 20,000,000 motor vehicles, is it not clear that traffic control is destined to become an increasingly important branch of highway engineering?" It is pointed out that traffic control in cities is largely under the direction of the police department, because in its earliest form traffic control was little more than the blowing of a policeman's whistle on congested streets. But with the advent of signaling apparatus the evolution of traffic control began to bring it more and more into the realm of engineering. The Chicago publication urges



Widening a road, using old road as base for center strip. Wide roads reduce accidents and increase efficiency of motor vehicles.

the employment of engineers as guides in selecting and locating street signals that traffic control may be as completely under scientific direction as railway signaling has long been, and says: "In the case of county and State highways, engineers are already the traffic-control officials, for the most part, and they should resist any attempt to take this function from them. It is clearly an engineering function, and it is one that is growing rapidly in importance."

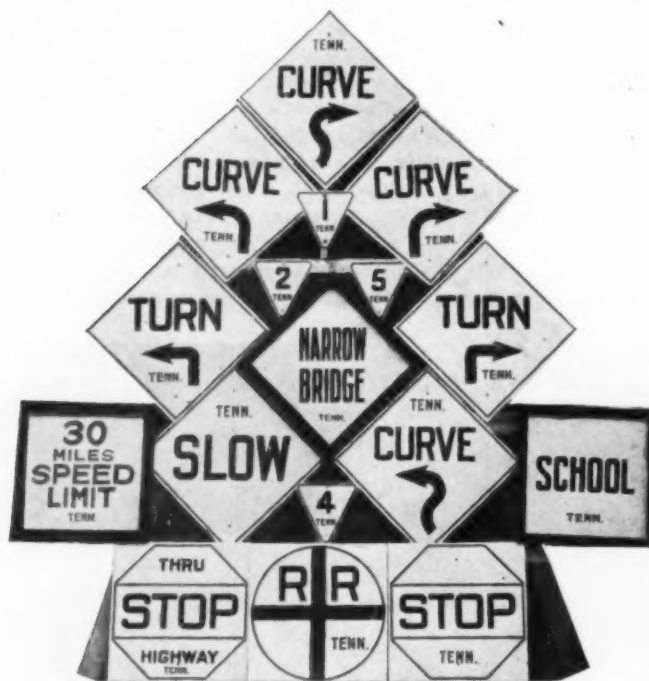
One of the pressing problems of municipalities, big and small, is to keep traffic moving faster and more smoothly. In many places light signals serve in the policeman's place in expediting traffic; the policeman now looks after pedestrians, straightens out traffic jams and sees that traffic regulations are observed. The new signals aid in a variety of ways: They tell traffic when to stop and go; illuminate boulevard or through-street traffic signs; warn at dangerous points, and serve as a guide by marking the traffic lanes.

As guides or street units they are placed nearly flush with the surface of the street to mark traffic lines in wide boulevards, to keep vehicles from cutting corners, etc. In the daytime they serve as a warning obstruction, and when lighted at night they are readily visible. Warning beacons that attract attention by flashing are placed at dangerous crossings and curves and at street ends. The stop-and-go signals are in common use, vari-colored lights being used to

control the movement of traffic. These are located sometimes at the far corner of an intersection, are suspended at the center of the intersection or are placed on a post or tower at the center of the intersection.

Signaling equipment of the types described is being widely used in the Southern States. Among the larger cities employing a signal system similar to those shown in the accompanying views are: Knoxville, Chattanooga and Memphis, Tenn.; Atlanta, Macon and Savannah, Ga.; Mobile, Montgomery, Huntsville and Anniston, Ala.; Biloxi and Jackson, Miss.; New Orleans, La., and Pensacola, Fla.

What is known as the center-suspension-type signal—that is, the signal suspended from cables or mast arms above the street intersection—is apparently the most favored. Until



Assembly of Tennessee's official warning signs and route markers conforming to the United States standard.

recently most signals of this type were operated by individual controllers mounted at the intersection in a suitable box, but now what are known as synchronous systems—that is, the operation of numerous signals from one controller—are being installed. In addition, controls providing for the progressive system are being used. This means that traffic can flow practically uninterrupted from one end of a system to the other without stopping, at a predetermined rate of speed. It is also noted that many of the smaller cities through which main highway routes pass are installing equipment of this type, primarily for safeguarding the cross traffic, which is usually local. Stated intervals are permitted not only for cross-town vehicular traffic, but, most important, for pedestrian traffic across these busy thoroughfares.

The development of safe motor vehicles by the perfection of running parts, proper body design and the use of safety devices is also aiding in reducing accidents, but further improvement along this line must be made in the future. Glaring headlights are a frequent cause of accidents. Much thought is now being given to the lighting of highways, which would make possible their efficient use through 24 hours of the day. The causeway out of Miami is now lighted for a long distance. The introduction of four-wheel brakes indicates manufacturers are seriously considering the question of providing greater security of equipment. The use of non-splintering glass for windows and windshields, automatic stop-signal lights, reflecting mirrors, cowl and fender lights

are some of the lesser details that aid in reducing accidents. The width of trucks and motorbuses must be controlled in the interest of general safety. The control of weights carried by motor vehicles is essential to the economic upkeep and reasonable life of the road, and most States are regulating this now. The safety of the highway itself depends upon a control of speed, of load per unit, of width and height of body, of type of vehicle and of tire.

The pedestrian traffic is also claiming attention in the interest of safety. Several States are now including in the design of roads a shoulder amply wide and well maintained to be serviceable as a path where pedestrians may walk. Safety islands and painted guide lines are in common use in cities. The time seems not far distant when pedestrians will have to observe traffic regulations such as govern the operation of vehicles. Crossing streets at other than corners is prohibited now in some cities.

Traffic congestion is itself a cause of many accidents, and indications are that even with vastly increased expenditures for highway improvements in the next few years the situation will grow even more acute than now, particularly in the vicinity of important centers. The formidable increase in traffic on our improved highways has meant not only a great economic loss, but has resulted in a steady increase in accidents. The public demands roads so designed and built and maintained as to permit quick and safe transportation at all times. What is more, they are willing to pay for improvements that will facilitate individual transportation service.

In 20 years more than 165,000 people have been killed on our streets and highways in automobile accidents, and records show they are increasing at the rate of 10 per cent annually, according to Col. A. B. Barber, manager of the Department of Transportation of the Chamber of Commerce of the United States. "It is high time," he said, "that the modern methods developed in this country in other lines of activity should be applied to the gigantic problem of reducing these losses. Understandable regulations, effective enforcement, intelligent engineering treatment and continued educational effort are the chief needs."

Our highways today are safer and more convenient than ever before, due to the splendid way in which the various State highway and Federal departments have assigned the best brains and ample funds to the problem. But there is no indication that the saturation point in the registration of motor vehicles is near at hand, and it is not probable that safety conditions will be such that they will not deserve the most serious consideration for several years to come; rather they will deserve the most serious consideration until accidents have been reduced to the absolute minimum.

### 398 Trucks Operated by Southern Dairies, Inc.

The Southern Dairies, Inc., with general offices in Washington, is operating 398 trucks throughout its territory; 328 of the trucks are ice cream and 70 are milk trucks; 107 of the trucks are electric and 201 gasoline. In addition to this equipment the company uses 20 milk wagons and 15 ice wagons.

Garages are maintained at Baltimore and Salisbury, Md.; Petersburg, Norfolk, Woodstock, Portsmouth and Newport News, Va.; Greensboro, Charlotte, Salisbury, Wilson and Rocky Mount, N. C.; Knoxville, Tenn.; Savannah, Ga.; Jacksonville, Fla.; Hanover, Pa.; Birmingham, Selma and Montgomery, Ala.

Bids will be received until January 14 by W. A. Dickenson, clerk of the Board of Commissioners of Hillsborough County, Tampa, Fla., for the purchase of \$610,000 of 6 per cent highway bonds.



# Some Requirements of the Highways of the Future.

"Super-automobile highways built through private enterprise are inevitable," says Walter Parker of Fenner & Beane, New Orleans financial house, and formerly manager of the Association of Commerce, New Orleans. "Highway construction is imposing a monster burden on the taxpayers for a system which, long before its completion, is known to provide inadequate facilities. Automobile owners do not object to the cost of good machinery, good roads and good service. That fact has made possible the rapid development of the automobile industry and the speed shown in highway construction. But the new generation will require far more in highway building than is provided for in present programs or capable of being paid for out of present-day tax revenues. The American people now pay in Federal, State and local taxes some \$11,500,000,000 annually. They are demanding reductions, not increases, in taxes."

Mr. Parker predicts that "automobile owners will soon be demanding wide, protected concrete speedways connecting the great centers. They will desire grade crossings wholly eliminated. Even if super-highways of this character are to cost no more than \$50,000 a mile, the addition of such a cost to the cost of normal highway construction and the carrying out of existing highway plans would bankrupt the tax collector and the public treasury."

"But super-highways of this character would be a good investment from the viewpoint of the automobile owner. They would save him time and real money on tires, wear and tear and on repair bills. Such roads would double the tire mileage and the life of the car. No automobile owner would hesitate to pay, say, 1 cent a mile for the privilege of using such a highway in preference to using free publicly built highways of less comfort and convenience. The contrast would equal that of a Pullman car and a day coach."

That the time has arrived when private enterprise may well begin to think of the investment opportunity presented by the need for super-highways is the belief of Mr. Parker. Assuming that such a highway could be built for \$50,000 a mile, 100 miles would involve the expenditure of \$5,000,000, he states, and a toll of 1 cent a mile would produce an annual revenue of \$1,825,000 with 2500 vehicles using such a road each way each day.

It is suggested that in this manner business enterprise might well enter the field of highway building so as to relieve congestion through offering to motor-vehicle owners a better and more economical service than the free public highways offer.

The production in the future of a very low-cost type of motorcar and the liquefaction of coal and lignite in the form of a low-cost motor fuel are foreseen by Mr. Parker, and these developments will, he thinks, hasten the need for the construction of super-highways of a de luxe character.

While the idea of building super-highways by private enterprise is not altogether new, the New York Times points out in a recent editorial that it has not been much discussed in recent years owing to the prevalent hope that the Federal and local governments would be able to improve existing roads and build new ones to meet the nation's needs. "But that the use of the roads is and will continue to be far in excess of the rate of building and repair now seems established," says the Times. "Aside from the constant increase in private cars and trucks, the bus system promises to grow so fast as to add to the congestion and to increase the wear and tear. Each new invention which cheapens the

cost of motoring will increase the strain on the nation's roads. To meet this will require ever-growing sums of money, which will have to come out of the taxpayers in some form or other."

Already the building of special motor-vehicle roads, generally toll roads, has received particular attention in Italy. The Engineering News-Record states that in Italian practice the *autostrada*, or special motor-vehicle road, is a paved highway on a separate right-of-way fenced and guarded at entrances, without intersections and crossings at grade, designed and reserved for motor vehicle—truck or automobile—traffic solely. It is described as an independent road, separate and distinct from existing highways between the same termini, designed and built for uninterrupted speed.

"Voluminous conclusions broadly in favor of such roads were adopted recently at the International Road Congress at Milan, with, however, the delegates from Great Britain and the United States declining to vote on the basis that the experience and service records are lacking for 'definite conclusions capable of general application,'" says the Engineering News-Record. "The conclusions are most interesting, perhaps, for the indication they furnish of the liberal views which European highway authorities express regarding the financing of special roads. It is held that they may be financed from the State's general balance, by a general motor tax, by general taxes (tolls) on users, by local bonds or subsidies or by any combination of these which may be for the public weal. Tariffs for tolls, it is considered, should be regulated by public authority. In regard to the justice and expediency of the toll-road principle the conclusion is that 'it is quite fair and rational that a special tax should be levied upon those who willingly make use of a speedier and more convenient means of transport over certain distances, while they are still free as any other motorist to choose between the *autostrada* and the ordinary road.' As the problem of the high-speed trunk road, perhaps the toll road, is directly before us in America, these conclusions of European engineers are of particular interest."

The increasing congestion on the highways of the country will force many innovations in highway engineering, in the belief of W. C. Markham, executive secretary of the American Association of State Highway Officials. Among these innovations will be cross-overs and cross-unders at intersecting points on all important highways and boulevards. Wide roadways, well lighted at night by electricity, or possibly by some method yet to be applied, such as a radioactive substance, will, if present trends continue, be policed through their lengths by "stop" and "go" lights. Indications are that on main highways instead of speed limits of 35 miles an hour motorists will be required to maintain some minimum figure, say 25 miles per hour, and failing to do this, may be arrested for obstructing traffic. There is a possibility of pedestrians who risk their lives and the peace of mind of drivers by crossing opposing traffic being arrested for interfering with the movement of traffic. In congested areas Mr. Markham believes that separate traffic lanes will be provided for pedestrians and vehicles.

These predictions are even now being fulfilled in part. In Pennsylvania and Indiana the Lincoln Highway is being widened to 36 feet. Four lane pavements with each 20-foot strip kept within its bound, preventing cutting-in either from opposing or accompanying traffic, are already being built in Illinois and Wisconsin. In Chicago an underground escalator will carry the pedestrian across the street, where now he is forced to pass through 14 lines of automobiles. Pico boulevard, in the Southwest, has been widened to 75 feet,

and the Cahuenga Pass road out of Los Angeles is being widened to 72 feet. Around Detroit 88-foot roads are being constructed on a right of way 204 feet wide. There are two separated roadways, 44 feet wide, for one-way traffic. On each of the four-track roadways horse-drawn vehicles keep to the right, slow-moving trucks outside them and automobiles in the two other lanes. Thus rapid, safe and easy movement is provided for all types of traffic. Space is provided between the roadways for trolley lines, and there is also space for parking and for pedestrians. Chicago has just completed a double-deck boulevard at a cost of \$22,000,000, known as Wacker Drive. It is eight blocks long and is expected to reduce present traffic congestion in the "loop district" 43 per cent. Automobile traffic on the upper level is wholly separated from the trucking on the lower level. Even before its completion new values in surrounding property of between \$200,000,000 and \$300,000,000 had been created. An elevated "express highway" is the answer the Borough of Manhattan and the State of New Jersey are making to the big traffic

problem that will come next spring with the opening of the Holland Vehicular Tunnel, and traffic engineers say it is a forerunner of wholesome revolution in city motor highways as a whole. The Manhattan boulevard will cost \$13,000,000 and the New Jersey highway \$40,000,000.

To make highways safe and to speed up traffic it is predicted that separate roads will be built for freight and for passenger service—a heavy-type construction for the first and a lighter type for the second. To promote safety at the intersection of important roads highway grade separations are now being built in the West, the design providing for two levels—through traffic proceeds on an overhead bridge and turning traffic swings wide of the bridge down to the level of the highway crossing at right angles beneath.

Thus throughout the country a digest of expert opinion shows the overwhelming conviction is upon traffic officials that automobile production will continue at high levels and the only way out is to find room for more cars and to handle traffic more efficiently.

## Big Volume of Road and Bridge Work in Southern States Indicated by Publication of 12,360 News Items in 1926.

Last year individual news items published in the Daily Bulletin and in the construction columns of the MANUFACTURERS RECORD covering road, paving and bridge work in the 16 Southern States numbered 12,361, including 2784 bridge, culvert and viaduct notices and 9577 road, paving and street announcements.

During the year 82,000 individual items, covering all classes of construction work, were published. Thus, road and bridge construction items constituted about one-seventh of the total reports in 1926.

Considering road and street items by months for last year, April holds first place, the total being 1057; July is second, with 996 notices, and February third, with 882. In May 857 items were published.

The greatest number of bridge, culvert and viaduct notices appeared in October, the total being 329. In July 295 items were published concerning this work. February comes next, with a total of 283.

Viewing the road and bridge program by States, as revealed by the number of items published covering these two closely allied classes of construction, Texas stands first, with a total of 2182, comprising 1750 road and 432 bridge reports. The Florida highway improvement program is represented by 1993 items, including 1575 road and 418 bridge notices. In Missouri the vast amount of highway and bridge work under way is indicated by the publication of 1283 items, including 1004 road and 279 bridge reports. In 1925 Florida stood first, with a total of 2989 items; Texas is second, with 2240 notices, and Missouri third, with 1775.

Road and bridge work is going steadily forward in the Southern States. Much progress was made during last year in completing stretches of road that formed important links in through-State highways. Many important bridges on important routes were completed and work is under way on a number of costly structures spanning Southern waters. Funds are being provided for these bridges by State, county and Federal aid, as well as private enterprise. Maintenance work is claiming more and more attention, and those States which have not yet built extensive systems of hard-surfaced highways are making every effort to keep the highways they have in serviceable condition the year round.

The Alabama Legislature will consider at its session this year a \$25,000,000 bond issue. North Carolina is talking

of an additional \$30,000,000 bond issue, which, if voted, would bring the total bonds voted for road work in that State to \$115,000,000. Plans are being discussed for another big bond issue in Missouri; the State is now rounding out a road program financed by a \$60,000,000 issue.

Every Southern State has adopted the gasoline tax, and with the steady increase in the registration of motor vehicles the revenue from this source is growing annually. As a result, new road construction and maintenance work on an enlarged scale is permitted.

The tables herewith, covering road and bridge work in the South, indicate what the various States are doing and plan to do in providing highways for motor transportation:

ROAD AND STREET ITEMS PUBLISHED IN 1926.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Alabama .....	31	25	31	41	31	32	44	50	31	24	18	47	412
Arkansas .....	12	17	13	25	17	19	25	10	24	4	16	12	194
Florida .....	123	261	103	194	149	116	146	78	110	97	103	85	1575
Georgia .....	57	23	50	47	32	31	60	20	35	13	40	42	441
Kentucky .....	14	20	13	49	32	79	105	70	49	37	14	89	551
Louisiana .....	36	29	40	34	30	19	35	35	41	33	35	44	411
Maryland .....	20	25	77	84	83	54	41	33	16	15	13	8	469
Mississippi .....	24	15	15	33	34	30	36	21	34	37	49	37	365
Missouri .....	105	72	68	136	62	74	129	95	57	41	15	150	1004
North Carolina ..	36	55	39	48	54	26	38	46	59	37	31	30	499
Oklahoma .....	7	20	49	14	45	39	43	16	24	44	16	44	361
South Carolina ..	12	17	25	16	30	25	23	6	20	22	50	39	284
Tennessee .....	46	41	32	66	34	44	18	20	31	54	10	36	432
Texas .....	138	209	162	152	148	138	148	114	184	115	125	117	1750
Virginia .....	17	16	29	65	30	20	31	21	16	18	21	14	298
West Virginia ..	12	30	60	53	55	80	75	42	39	51	24	10	531
Totals .....	690	882	806	1057	857	826	996	677	770	642	580	794	9577

BRIDGE AND CULVERT ITEMS PUBLISHED IN 1926.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Alabama .....	3	15	4	6	4	12	10	13	3	6	6	6	83
Arkansas .....	1	5	5	3	6	8	9	3	3	3	3	3	65
Florida .....	40	41	50	33	29	49	37	15	34	23	23	45	418
Georgia .....	10	24	9	36	9	13	25	7	6	1	2	18	160
Kentucky .....	12	7	7	10	3	3	11	12	12	5	1	1	57
Louisiana .....	7	5	12	6	6	7	12	5	7	7	5	8	87
Maryland .....	3	3	3	42	3	4	7	3	8	9	1	1	84
Mississippi .....	8	8	47	10	6	29	14	13	27	14	7	185	
Missouri .....	67	3	30	22	13	41	24	9	29	5	34	279	
North Carolina ..	1	10	6	16	16	7	10	22	23	31	10	7	159
Oklahoma .....	30	40	18	10	10	19	2	40	60	2	15	246	
South Carolina ..	6	6	7	10	8	4	18	6	18	17	3	11	114
Tennessee .....	8	33	18	4	15	6	17	2	12	63	2	48	228
Texas .....	50	64	54	45	28	19	33	35	28	31	27	18	432
Virginia .....	6	9	10	11	4	11	7	6	4	10	8	10	96
West Virginia...	10	10	5	13	8	10	10	7	8	3	7	91	
Totals .....	241	283	243	278	186	180	295	174	220	329	117	238	2784



# The South Turns to the Commercial Trailer.

By ALLAN P. AMES, Manager, Trailer Manufacturers Association of America.

The marked increase during the last few years in the use of commercial trailers in the Southern States is a significant index of commercial and industrial prosperity. Where there are haulers, there must be goods to be hauled. And when haulers indicate a growing interest in up-to-date economic means of hauling, the sign is not only significant but healthy.

A glance at the fields in which the trailer is being used today in the South—the trailer which 10 years ago was a novelty below the Mason-Dixon line—and a review of firms which have adopted it in their transportation, may surprise those who have not watched the trend from close quarters. Among other things it explains the growing demand for new legislation that will give full recognition to the trailer principle of transportation.

A recent survey conducted by the Trailer Manufacturers Association showed that in several Southern States where the trailer has either been ignored in old laws or included under the sweeping title of "vehicles" highway commissioners have endorsed laws giving the trailer the additional weight allowance, which is their due and a proper definition under the law.

This correspondence with Southern highway authorities showed also a marked change in attitude toward the trailer method of hauling. Commissioners and engineers in charge of interpreting the existing statutes explained that where possible they have permitted commercial trailers their proper additional weight allowance over and above that given four-wheel vehicles with motors attached, either on the basis of the extra axles or the extra rubber on the road. Thus a semi-trailer-tractor combination would be allowed the weight allowance of a four-wheel vehicle plus the weight allowance for a single axle or the weight allowance for an extra pair of wheels.

It is obvious that behind all these changes in practice and opinion stands the potent influence of an economic need. The South wants economic hauling. The South has seen the use

to which it can put commercial trailers. Haulers are, therefore, demanding that the trailer be recognized in the spirit and the letter of the law.

It would be a mistake to assume that any single industry was behind these changes, however. On the contrary, transportation in general has made the demand.

A complete list of the organizations now using commercial trailers in the South would be difficult to obtain and would fill many pages. But a glance at the variety and kinds of industries which have adopted trailer transportation will be sufficiently instructive. And such a survey points inevitably to the fact that not only the pioneer organizations, but industry in general below the famous line of Mason and Dixon is giving thought to speeding up transportation, reducing overhead and cutting costs.

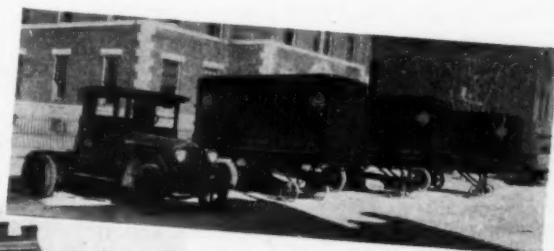
When Southern manufacturers, wholesalers, haulers, oil drillers and all the rest made a general attack upon the transportation problem, they found two sources of information at hand—the experiences of the great commercial States and of a few pioneer haulers in the South who had already accepted the trailer. Universally they found what had been true in the North and West was true in the South as well. In fact, the South discovered trailer advantages which applied especially to its own problems.

Where there is a large amount of industrial activity there are good roads. Transportation demands them. The Southern hauler, tentatively employing commercial trailers, found that he frequently had to take them across more difficult stretches of highway than his Northern neighbor had done. But here the trailer showed its first "local" advantage—its riding qualities.

Both the four-wheel trailer and the semi-trailer have the advantage of distributing their loads over four evenly balanced springs instead of two heavy springs, as is the case with the truck. The semi-trailer, for example, rests about 60 per cent of its load on the trailer wheels and 40 per cent on the tractor drive wheels. The weight of a truckload rests



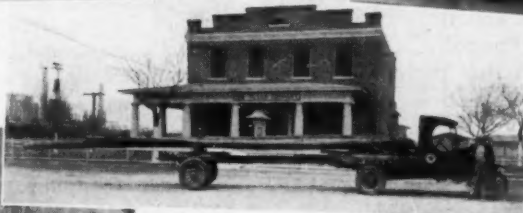
Heavy-duty drop-frame semi-trailer,  
Mente & Co., Inc., New Orleans.



Type of box-car trailer used by  
American Express Company,  
St. Louis.



Frame body semi-trailer of Great Southern Wire Bound  
Box Company, New Orleans.



Type of pole trailer  
used extensively in  
Southern oil fields.



Detachable semi-trailers with tank bodies used by  
the Walker-Hill Dairy, Washington, D. C.

about eighty-five per cent on the truck's drive wheels.

And this same factor, weight distribution, has been influential in winning official sanction for the trailer from State officials. Road destruction can be largely laid at the door of drive wheels. The tractor-trailer combination carries about 40 per cent of the weight on the drive wheels.

The principal factor in trailer acceptance in the South, however, is its economy. The commercial trailer, adapting

the Bessemer Transfer and Storage Company and the United States Engineers Office at Florence.

Kentucky shows the same healthy sign of variety. In Louisville we find the Quaker Maid Grocery Company, the Louisville Firewood Company, the Edwards Transfer System using the trailers. The Swiss Oil Corporation of Bowling Green has adopted the trailer method, as have innumerable other firms throughout the State. In Louisiana the American Can



Part of one of the largest trailer fleets in the country—operated by the Columbia Terminals Company, St. Louis, in transporting freight to and from railroad terminals.

the theory of railroad hauling to motor transportation, puts the motive power to work hauling instead of carrying. Thus a tractor with a five-ton rating can haul 10 tons on a semi-trailer. The trailer, in other words, increases capacity, which means fewer trips for a given volume of hauling. That, in turn, means a saving in time, a saving in running costs and a saving in investment for equipment.

Again, the commercial trailer cuts out the motor time usually wasted during loading and unloading operations. While a trailer is being loaded, the tractor, a detached motive power, is hauling a second trailer. While the second trailer is unloading, the tractor is hauling a third. As a result there is no motor idleness and no driver idleness, and hence no depreciation which is not compensated by income-producing service.

The proof of trailer acceptance in the South lies not only in the great and growing number of trailer users, but in their variety as well. Every field is covered. For example, in Florida, where one trailer manufacturer alone lists 43 separate trailer users, trailers have been adopted by the city of Miami, the Seaboard Oil Company, the Utility Transfer Company, the Wood Hydraulic Hoist and Body Company of Jacksonville; the Coronet Phosphate Company of Plant City; the Phoenix Utility Company and Florida Power and Light Company, operating throughout the State from Miami headquarters; the Pensacola Turpentine and Rosin Company at Pensacola; the A. B. C. Storage and Transfer Company at Orlando; the Mt. Ararat Sand Company at Daytona, and others too numerous to list.

Georgia has more than a score of separate users on the lists of a single trailer manufacturer. They serve such diverse purposes as those of the Postal Telegraph Company of Atlanta, the Augusta Lumber Company and the Elberta Crate Company of Bainbridge.

In Alabama leading trailer users include the Southern Dairies Company, the Dixie Construction Company, the Moore-Handley Hardware Company and the Birmingham Electric Company at Birmingham; the Alabama Coca-Cola Bottling Company at Anniston; the Tuscaloosa Cooperage Company,

Company, the General Shipping Corporation, the Interstate Wholesale Groceries, Inc., the Lukens Steel Company, the city of New Orleans and the American Brick Works, all of New Orleans, have trailers or trailer fleets. The city of Baltimore has adopted the trailer, as have the American Railway Express Company, the Western Maryland Dairy Company and the Consolidated Gas, Electric Light and Power Company of Baltimore. Mississippi is using the trailer in more than a dozen cities. The Terminal Warehouse Company, the Newport Ice Company and the George Niemeyer Grain Company are a few of Arkansas' better-known trailer users. In North Carolina the Coca-Cola Bottling Company of Rocky Mount and the Carolina Baking Company of Greensboro have typical fleets. Oklahoma uses the trailer in the oil fields, as typified by fleets operated by the Flesher Petroleum Company, the Humble Oil and Refining Company and the Wooster Drilling Company. But here, again, the trailer is used for every sort of hauling. Texas has filled its oil fields with trailers, used by such organizations as the Texas Company and the Gulf Refining Company, to name only two. But trailers are used by the Southern Transportation Company of Dallas, the city of Amarillo, the Texas Power and Light Company and many others.

South Carolina is represented in the trailer field by such organizations as the Carolina Public Service Company and the Morgan Lumber Company of Edgefield. The American Railway Express Company of Memphis, Tenn.; the General Motors Truck Company of Memphis, and the Tennessee Cedar Company of Murfreesboro are typical Tennessee trailer haulers.

In Virginia we find such trailer users as the Madison Transfer Company of Richmond and the Virginia Barrel Company of Winchester. West Virginia adds the Fleming Motor Freight and the Weaver Motor Company of Charleston. Washington, D. C., shows a typical trailer user in the Walker-Hill Dairy. Missouri, one of the great trailer States, has one of the most remarkable of trailer installations, the Columbia Terminals Company of St. Louis, not to mention a hundred others.



# Why Improved Highways Pay Big Dividends.

The extent to which a system of improved highways is paying dividends, not only to the State in which it is located and to all its people, but particularly to automobile owners whose taxes built the roads, is shown by Edgar Watkins, an Atlanta attorney, in a recent issue of the Atlanta Constitution. Among the items of profit which Mr. Watkins cites are increased commerce, saving in time, cheaper haulage and expanding recreational facilities. While these advantages cannot be computed in actual dollars and cents, they represent a huge total.

It is possible, however, to compute the savings in motor equipment—in the wear and tear to automobiles, trucks and buses—and in the cost of operation. The outlay for modern highways in California is given by Mr. Watkins as around \$100,000,000. A recent report of the State Highway Department shows that in the last four years traffic on the State highways has increased 93 per cent and amounts to 2,120,000,000 miles annually. This mileage was determined by counts made at 103 points. There are 1,500,000 automobiles registered in the State.

"Suppose," says Mr. Watkins, "those 2,120,000,000 miles had been traveled over the old dirt roads, with chuckholes, bad grades, haphazard curves and poor traction. Isn't it well within the facts to put the saving of car expense at 1 cent a mile? And that means a saving of \$21,200,000 a year in tires, springs, gasoline and depreciation. At that rate we could rip out our entire State highway system every five years and rebuild it out of the amounts saved in the wear and tear to automobiles."

"We have seen the California Highway Department report," comments the Constitution. "One very considerable accretion to California's wealth, caused by its paved highway system, is the enormous expansion of its agricultural and horticultural interests. The report omits any reference to this, and yet it is perhaps the biggest item of profit produced by the highway system."

"We can illustrate with North Carolina, which has a paved highway system on a parity with many other States that have recognized the economic value of through State, connected, hard-surfaced highways. And we can make the comparison with Georgia. In 1910, when none of the Southern States had paved highways of consequence, and in that matter all were practically on the same basis, the aggregate gross value of Georgia's agricultural products was \$219,000,000, as against the gross value of North Carolina's agricultural products of \$176,000,000. At that time only Texas and Missouri exceeded Georgia in agricultural wealth. In 1925 North Carolina, with its paved highway system, school expansion and general spirit of progress, had run its aggregate gross value of agricultural products up to \$442,000,000, as against Georgia's \$332,000,000. Georgia's values were exceeded not only by North Carolina, but by Kentucky, Mississippi, Missouri, Oklahoma, Tennessee and Texas."

"Could there be a more impressive lesson as to the dividends paid by good roads?"

That good highways pay dividends is also shown in a comprehensive study of the whole field of highway transport under the title "Report of a Survey of Transportation on the State Highway System of Connecticut," recently completed by the Bureau of Public Roads and the Connecticut State Highway Department. The annual traffic used as a basis of computation is 414,000,000 vehicle-miles, involving 58,000,000 net tons of commodities and 974,000,000 passenger-miles. These figures represent a great deal of money spent in transportation, as it is figured that not less than 10 cents per vehicle-mile is the cost for passenger cars and

25 cents per vehicle-mile for trucks. If it is assumed that the value of improved highway service is 1 cent per passenger-car-mile and 3 cents per truck-mile, which is certainly conservative, it is calculated that the return in the year September, 1922, to September, 1923, was 23 per cent on the amount invested in the State trunk highway system. This calculation takes into account everything, including the depreciation of the roads during the period specified. No account is made of the very real, but indirect, returns from highway transportation, such as the increase in the time value of goods delivered more promptly than by other transportation methods and the added value to real estate.

This report makes a very interesting comparison between motortruck and rail tonnage. No direct comparison between total tonnage is made, but it is shown that 90 per cent of the tonnage hauled less than 60 miles is moved by truck. A point brought out in the discussion of motortruck and rail haulage is that railways here gained as well as lost by the introduction of motortrucks. The statement is made that losses to railroads in general freight "have been more than compensated by the enormous rail tonnage accruing from the manufacture, repair and delivery of the motor vehicles and their accessories, to say nothing of the propensity to travel, which the motor vehicles have stimulated greatly."

There is abundant evidence that good roads pay in many other ways. A recent check on tourist traffic in Missouri, made by B. H. Piepmeier, chief highway engineer, leads to an estimate that motor tourists are spending approximately \$60,000,000 annually in the State, which sum represents a return in 12 months equivalent to the amount of the bond issue for the State highway system. The traffic count indicated that from 800,000 to 900,000 tourists visited the State in seven months. These tourists paid a gasoline tax alone totaling \$1,000,000. It is pointed out that only about one-half of the State highway system has yet been completed and that as the system is advanced the number of motorists attracted to the State will be steadily increased.

"Perhaps there is not a fair-minded vehicle owner in Missouri today who will not admit he has already received more from the improved roads than he has put into them," says the Kansas City Star in a recent editorial discussing the returns that highways bring. "For all the residents there are good roads dividends. The highways are being paid for by the owners of motor vehicles. That arrangement has been made on the assumption that these will be the chief beneficiaries of the improvement. The assumption is sound."

"The State itself is receiving some of the best advertising it has ever had from its excellent highways. They are making Missouri known as a progressive State. They are aiding, or at least will be aiding, in the building of better schools. They are helping to build up markets for the farmers. They are bringing city and country closer together and are making possible new social contacts among the various sections of the State."

The automobile tourists from the North and East have helped to make better known throughout the country the South's opportunities and possibilities, and this has contributed largely to the recent Southern industrial and business development. Well-to-do motorists from the North, seeking relief from the rigors of Northern winters, discovered the possibilities of Florida as a land of business and investment opportunity. They came with their families and told their neighbors, and the neighbors came with their families, and soon the roads were crowded with Northern and Eastern people making the annual journey to the South.

Of course, the railroads brought many others, but very often those who came by rail traveled rapidly and thus saw less than the motorists, who, traveling more or less leisurely, viewed the country through which they passed under advantageous conditions.

And now Florida is not the whole attraction. The motor tourist has discovered on his journeys to and from Florida that many other Southern States have attractions for the home-seeker and for the investor. The Southern States in this way have gained fine citizens from among the many tourists that have traveled their roads. The resources and opportunities and climate of the South are attracting visitors in a steadily increasing number.

"The motor tourist is worth looking after," said the An-niston Star in a recent editorial, "The Motor Tourist Is a Big Factor in Southern Growth." "He is a potential power

for development. It pays a town or a State to cultivate him, to make him feel at home, to show him the best we have to offer and to make his coming easy by providing roads he can travel in comfort and safety."

Discussing the general highway situation in the Southern States, James M. Thomson, publisher of the New Orleans Item, writes the MANUFACTURERS RECORD as follows:

"I do not know your thought on the relationship of this highway development to the entire South, but it is my view that it has vast potentialities because of the South's climate and attractions for the people of America. We can all write as much as we please about ourselves, but nothing is a substitute for having people come and see us for themselves. And one cannot travel on trains as he can by automobile over good roads with his mind free for the consideration of what he sees as he goes along."

## States Waking Up to the Need for Highway Beautification.

Few states have good laws providing for planting and caring for trees along the roadside, says the Department of Agriculture in a recent bulletin, "Planting of the Roadside." Despite this fact it is pointed out that interest in beautifying the country highways in the United States has increased rapidly during the last few years. Indications are that the greater interest in rural roads is due largely to the growing automobile traffic, a large part of which is pleasure driving and, naturally, the most beautiful routes are sought.

The traveling public has as much interest in the appearance of the road as has the adjoining property holder. Furthermore, it is usually difficult to get each property holder to approve and act on a given plan. For these reasons the Department believes it is best to place the planting and subsequent care of roadside trees in the hands of a public body representing some such division as the State, county, town, township or parish. Because of the intimate relationship between road construction and maintenance and the upkeep of the roadside, the closest co-operation between the highway department and those having the trees in charge is needed, says the bulletin.

Maryland 12 years ago passed a State-wide law forbidding the cutting down or trimming a roadside tree without first getting a permit from the State Forestry Department. Other

States have followed the Maryland example. As a result, the public-utilities companies, with pole lines along the Maryland highways, now keep most of the trees in the best condition possible. The State Forester is planting annually about 2000 trees along the State highways.

Under a plan recently perfected 2600 trees, comprising oaks, Norway maples, sugar maples, American elms, silver maples, Crimean lindens and mountain ash, will be planted on five of the most important State routes in Connecticut. California has undertaken roadside planting over a period of about 20 years, and there are many tree-arched roads to greet the motorist. A recent announcement by the Alabama State Commission of Forestry points to Jasper as one of the communities in Alabama which is engaged in beautifying the road approaches by the planting of shade trees, and reports that a number of other communities are planning similar work.

The Birmingham News in a recent editorial expresses the hope "that the new legislature will add to the duties of the State Highway Commission a requirement that each stretch of road constructed shall be planted with appropriate trees at the sides; graded, sodded with grass, and where possible ornamental trees and shrubs from the Alabama woods shall also be given place." The various communities can well take up the question of beautifying a mile of each approach to the town or city, the News believes. The Rotary Club of Ithaca, N. Y., has undertaken the planting of a mile of roadside.



Lemon Avenue, leading into Palmetto, Fla.—an example of highway beautification.



# \$1,250,000,000 in Southern Highway Contracts in Five Years.

**\$248,000,000 IN AWARDS LAST YEAR—INCREASED EXPENDITURES FOR FUTURE INDICATED.**

Contracts awarded for road, paving and bridge work in the 16 Southern States set a new high record in 1926, with a total valuation of more than \$248,000,000. This compares with award for the preceding year of \$237,700,000, and with \$183,680,000 and \$174,600,000 representing contracts let for similar work in 1924 and 1923, respectively.

These figures, representing the value of contracts awarded, are obtained from items published in the Daily Bulletin and in the construction columns of the MANUFACTURERS RECORD. They do not include individual projects involving the expenditure of under \$10,000, nor has any attempt been made to estimate the cost of projects for which no figures were available. It is thus quite safe to estimate that the total valuation of contracts awarded in 1926 for all classes of road, paving and bridge work in the 16 Southern States was in excess of \$375,000,000.

Preliminary announcements on contracts to be let during the year aggregated \$466,400,000, compared with \$385,800,000, representing proposed construction announced in the preceding year, and with \$178,200,000 and \$194,000,000, the totals for similar work in 1924 and 1923, respectively.

In July contracts totaling more than \$34,400,000 were awarded, placing this month first, considering the amount of money involved. This monthly figure is exceeded only by the total valuation of awards in November, 1925, aggregating \$37,000,000. Announcements concerning 1926 proposed road work established a high record in November, the total amount of money involved exceeding \$67,000,000.

Road and bridge building in the South is keeping pace with the expansion in industry and business and in new construction. In the past five years, 1922 to 1926, inclusive,

contracts let for all classes of road and bridge work amount to more than \$1,500,000,000. Last year several of the States sold the remainder of bonds voted for road purposes four or five years ago, and when additional bonds are voted this year road work will go forward with renewed vigor. North Carolina, Missouri and Alabama plan additional issues. Counties in many Southern States are voting big sums in the aggregate to finance purely local and county roads so that they may be connected with the State highway system. With the rapid development of industry and business in Southern cities and towns, big sums are being spent for paving and allied improvements. Many road contracts will be let in January so that work may commence promptly with the opening of spring. The past year has been the biggest in road-building history of the South and the outlook for the continuation of this class of construction in volume is bright.

The tables herewith show the road-building program in the South as suggested by the award of contracts and the announcements of proposed work during the past five years:

## COMPARATIVE RECORD OF ROAD AND BRIDGE CONSTRUCTION IN THE SOUTHERN STATES.

	Contracts awarded 1925	Contracts awarded 1926	Contracts to be awarded 1925	Contracts to be awarded 1926
January .....	\$11,941,128	\$15,507,000	\$26,293,279	\$39,692,000
February .....	6,650,827	16,599,000	12,229,435	51,233,500
March .....	15,002,850	28,679,000	11,762,480	37,921,000
April .....	26,082,450	22,722,000	16,012,509	40,630,000
May .....	22,243,988	17,339,000	12,511,130	32,998,500
June .....	14,498,730	19,129,000	20,840,746	25,693,000
July .....	17,274,240	34,447,500	25,068,957	40,477,000
August .....	17,112,139	16,452,000	10,340,926	12,536,500
September .....	30,215,109	25,128,000	22,791,804	51,462,500
October .....	26,245,218	23,882,500	39,514,284	27,133,000
November .....	37,196,298	8,427,000	112,593,820	67,053,000
December .....	13,255,105	20,067,500	75,876,667	39,636,000
<b>Totals .....</b>	<b>\$237,718,089</b>	<b>\$248,379,500</b>	<b>\$385,536,037</b>	<b>\$466,486,000</b>
1924 .....	183,681,538		178,261,677	
1923 .....	174,647,797		194,072,530	
1922 .....	157,119,589		192,358,574	

## Electric Refrigeration for Motortrucks.

Electric refrigeration, a new American industry, now experiencing a marvelous growth, has made its debut in the field of transportation. The Frigidaire Corporation, a General Motors subsidiary, has been supplying motortrucks with refrigerating equipment for several months.

A year ago the company placed its equipment in an ordinary ice-cream-delivery truck at Dayton, Ohio, and from this experiment worked out an installation, adapted to any type of refrigerated truck body. This installation is now being used by a number of large ice-cream companies. The company does not build either trucks or bodies, but has co-operated with a number of truck and body builders, who see a good market for such delivery equipment, in working out a satisfactory installation for this kind of service. The same refrigerating is employed as in the ordinary household electric refrigerator.

A special installation recently made for a motion-picture company indicates the possibilities of this type of refrigeration. Frigidaire equipped for this company a commissary truck, to be used in transporting food for hundreds of people working on location, far away from regular food supplies. Meat packers have become interested in such trucks, and there is a possibility that in a few months a number of packers will be using electrically refrigerated trucks for delivery of meats to dealers.

More even temperature, reduction in total weight, greater

efficiency, more flexible operation and lower installation and operating cost are advantages claimed for this type of refrigeration. It is said that the total weight of the mechanical-refrigeration unit is about 675 pounds, as compared with



A separate electric-generating unit operates the refrigerating system on this truck.

2000 to 3000 pounds where ice, salt and brine are depended upon.

Each cooling unit consists of a Delco-Light automatic-power plant, a Frigidaire compressor and copper-cooling coils placed inside the delivery body. Fuel for the power plant is obtained from the truck's gasoline supply, which can be replenished at any filling station, insuring constant operation.

### Southern Bus Lines Operated Under Stone & Webster Management.

Stone & Webster, Inc., Boston, Mass., have three bus lines with separate corporate names under its management in the South. In conjunction with street railway transportation systems, also under its supervision, a large number of buses are operated on special routes or as feeders to existing car lines. The lines managed are: Florida Motor Lines, Inc., operating throughout the State of Florida; Columbus Transportation Company, operating in conjunction with the electric transportation system of the Columbus Electric and Power Company, Columbus, Ga., and the Texas Bus Lines, Inc., which operate between Galveston and Texas City, Texas.



An example of the type of bus terminal building in smaller Florida cities. This is the Tarpon Springs Station.

The company is managing the operation of buses, which have replaced street railway systems in Key West, Fla., and on the lines of the Rio Grande Valley Traction Company between El Paso and Ysleta, Texas.

The Florida Motor Lines, Inc., is the most extensive bus system in Florida, operating from Tarpon Springs and St. Petersburg on the west coast across the State to Daytona Beach, West Palm Beach, Miami and Jacksonville, also lines running from Jacksonville to Florida City. About 148 buses are operated over 1290 miles of route; the fares average approximately 3.6 cents per mile. The average speed of the buses over the entire system is 21 miles an hour. Repair shops are located in Tampa, Orlando, Jacksonville and West Palm Beach. Modern drive-in bus stations have been pro-



Commodious bus station recently completed at Tampa.

vided in most of the large Florida cities at an aggregate cost of \$1,000,000. Spacious waiting rooms, restrooms, parcel checkrooms and every facility for the comfort and convenience of the tourists is provided in these stations. All the buses are operated by uniformed drivers.

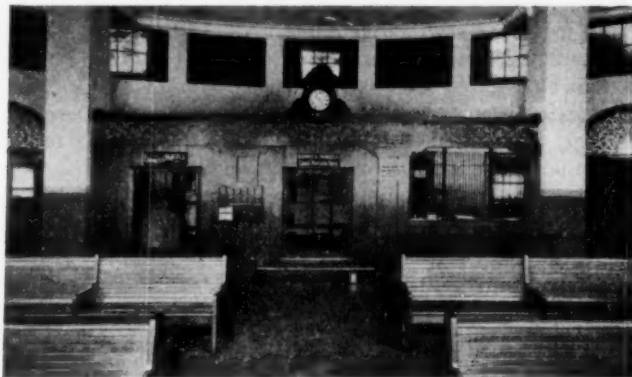
Tickets may be purchased over the company's lines to any

destination, with stop-overs along the route. Three pieces of ordinary hand baggage are carried without charge, and facilities are provided for handling excess baggage and trunks to any part of the State.

The rolling stock of the Florida Motor Lines includes buses as follows: Three White, open type, 20-passenger; four White, sedan type, 22-passenger; one White, sedan type, 15-passenger; two White, parlor type, 19-passenger; one White, parlor type, 22-passenger; 33 White, parlor type, 23-passenger; one Fageol, parlor type, 16-passenger; five Fageol, parlor type, 18-passenger; two Fageol, parlor type, 20-passenger; 34 Fageol, parlor type, 21-passenger; seven Fageol, parlor type, 22-passenger; eight Fageol, sedan type, 23-passenger; four Fageol, intercity type, 23-passenger; two Fageol, double-deck type, 47-passenger; eight Mack, parlor type, 20-passenger; three Mack, parlor type, 21-passenger; one Mack, street-car type, 25-passenger; six Reo, sedan type, 18-passenger; two Reo, parlor type, 18-passenger; seven Reo, street-car type, 21-passenger; two Studebaker, parlor type, 14-passenger; three Studebaker, sedan type, 12-passenger.

Other lines managed by Stone & Webster, Inc., include:

The Columbus Transportation Company, Columbus, Ga., operates 22 buses on a 7-cent fare, with transfer privileges



Interior of waiting room of bus station, Tampa.

to street cars. It has five 1925 model Whites, 29-passenger buses and 17 1926 model Studebakers.

The Texas Bus Lines, Inc., operate four buses—three 1926 model Studebakers, 16-passenger, parlor-car type, and one Yellow Coach parlor car. The fare between Galveston and Texas City is 50 cents.

The buses operating in Key West, which have replaced the street cars, are of the street-car type and include six 1926 model Yellow Coach buses and four 1925 model Mack buses. The fare charge is 5 cents, with transfer privilege.

The Rio Grande Valley Traction Company has replaced its interurban cars with five 21-passenger 1926 model Reo intercity cars. They make 17 round trips daily and a fare of 30 cents one way is charged.

The Virginia Electric and Power Company in Norfolk and Richmond operates 193 buses of various makes and types.

### Alabama Asks Bids on 50 Miles.

Montgomery, Ala.—Bids have been invited by the State Highway Department for the construction of a number of road projects in the State, including an overhead crossing in Conecuh county, on the Louisville and Nashville Railroad, near Repton, for which bids will be opened January 12. On the same date bids will be opened for five projects, covering a total of approximately 38 miles of clearing, grubbing, grading and drainage structures. The department will open bids on January 14 for 6.2 miles of clay-gravel road in Russell county, street paving in the town of Russellville, Franklin county, and for 5 miles of clearing, grubbing, grading and drainage structures in Choctaw county.



# Southern Road Development by States.

## \$7,800,000 Road and Bridge Projects Completed by Alabama in 1926.

During the 12-month period ending January 1 the Alabama Highway Department completed 632 miles of road, together with the necessary drainage structures, at a cost of \$7,820,000. This State is now spending the last of its \$25,000,000 road-bond issue and at the present time no definite program for this year has been adopted. The legislature was called into special session on December 28 and will consider submitting another bond issue of \$25,000,000 to the people, and, according to reports from the State, public sentiment appears to be almost unanimous in favor of another bond issue.

Alabama now has a two-cent tax on gasoline. This money

there is available \$2,000,000 of bonds of the \$25,000,000 issue which remain unsold.

Alabama has nine navigable rivers, and this makes the bridge problem in the State a very expensive one. The State Highway Commission, through funds obtained by the sale of bonds, Federal aid, municipal and county aid, has constructed



Bridge over Tallapoosa River, Alabama.

does not accrue to the State road funds, but is collected by the State and distributed equally to each of the 67 counties. It goes into the county road funds and is expended by the County Commissioners of the various counties. For 1927



Bituminous macadam road near Huntsville, Alabama.

a number of modern concrete and steel bridges across the rivers of the State. On July 1, 1926, there had either been completed or were then under construction bridges with an aggregate length of 73,131 feet. These projects involve the expenditure of more than \$6,300,000. The Mobile Bay bridge, which will connect Mobile with Pensacola via Baldwin county, will be completed at a cost of about \$2,500,000 in four months. It will close a gap in the Old Spanish Trail, which is one of the most important highways for tourist travel traversing Alabama. This structure is being built by the Mobile Bay Bridge Company.

### Two Types of Motorcoaches Used in Atlanta.

Motorcoach service in Atlanta is supplied by the Atlanta Coach Company, a subsidiary of the Georgia Railway and Power Company, the latter operating the street-railway system. The equipment consists of 15 double-deck 60-passenger Fageol gas-electric one-man safety coaches. They operate on two routes through residential sections, the downtown business district and to the steam-railway terminal station.

The coaches are housed and handled at garages and shops of the company. A new garage, 115 by 250 feet, is to be built this year. A new paint shop, 38 by 40 feet, and a store-room, 25 by 84 feet, will also be constructed.

The company recently placed an order for 10 single-deck, 21-passenger Yellow coaches. They are expected to be in service early this year. The new coaches will be used on the base schedules and the double-deck coaches will be used in the morning and afternoon rush hours.



21-passenger Yellow coaches and 60-passenger Fageol gas-electric coaches are used in Atlanta service.

## \$6,750,000 Expended for Arkansas Roads Last Year—\$7,000,000 Program Outlined for 1927.

By R. C. LIMERICK, State Highway Engineer, Little Rock.

The 1926 Arkansas road development, under the highway law of 1923, went ahead on a plane commensurate with the funds available for the purpose. Comparatively speaking, Arkansas road revenues are small, but with the steady increase in motor vehicles from year to year these revenues are growing to such an amount that before very long extensive construction work can be undertaken.

Many additional links in the highway system were completed last year, opening up new sections of the State for motor travel, several important bridge projects were started and the contract was let for the first unit of the new Harahan Viaduct, opposite Memphis. Much progress has been made on the complete marking of the Arkansas highway system with standard route and caution signs, and efficient organization has been developed to meet the many demands of a large highway system.

Last year about \$6,750,000 was expended on the maintenance, reconstruction and construction of State highways. It

During 1926 there was available from the motor vehicle and gasoline and oil taxes \$4,200,000; from Federal aid approximately \$1,500,000, and from the county and road improvement district taxes, \$1,050,000. While the total receipts from the motor-vehicle and gasoline and oil taxes during the present year will amount to approximately \$7,500,000, \$3,000,-



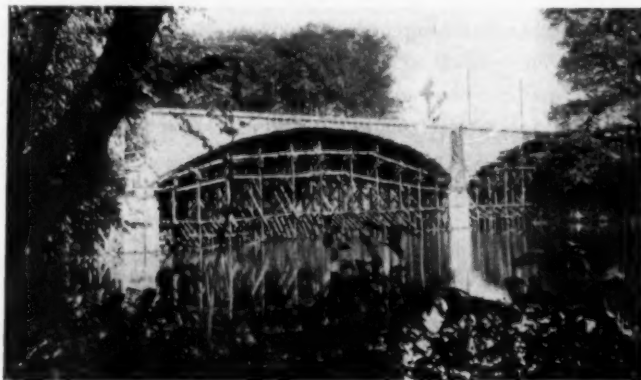
Asphaltic concrete road in Phillips County, Arkansas.

is expected that the funds available for State highway work in 1927 will be between \$6,500,000 and \$7,000,000.

The table below shows the status of improvements on the Arkansas highway system to December 31, 1926:

Types	Mileage completed	Percentage of entire system
Pavements, asphalt and concrete.....	731.6	8.76
Gravel, macadam, chert, shale.....	3416.3	40.94
Improved graded .....	2543.6	30.48
Unimproved .....	1307.7	15.67
Under construction .....	346.3	4.15
Total .....	8345.5	100.00

All operations of the highway department in maintaining and building the roads of the State highway system are taken care of by funds from four different sources as follows: 1—Motor-vehicle license taxes; 2—Gasoline and motor-oil taxes; 3—Federal aid; and 4—County and road improvement district aid.



Concrete arch bridge under construction in Arkansas.

000 of this amount is returned to the counties and road-improvement districts and not placed to the credit of the State highway department for State roads.

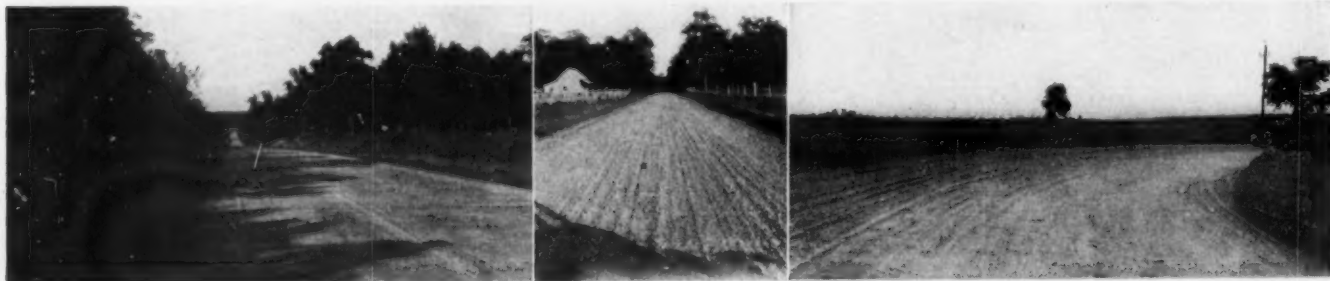
An idea of the increases in the motor vehicle and gasoline and oil taxes during the past three years may be gained from the fact that in 1923 a total of 115,000 motor vehicles were licensed in Arkansas, 142,000 in 1924, 185,000 in 1925 and 215,000 in 1926. Our average motor-vehicle tax is about \$17 per car.

### Road Builders' Association to Award Prizes for Essays.

A total of \$750 in prizes for the best essays on "The Benefits to a Nation by Improved Highways" will be awarded during Good Roads Week, from January 10 to 14, inclusive, at the annual convention and road show at Chicago of the American Road Builders' Association. This is the third essay contest conducted by the association; it was open to all college and university students.

### North Carolina Roads to Cost \$900,000.

Raleigh, N. C.—Contracts have recently been awarded by the State Highway Commission for the construction of 10 road projects to cost approximately \$900,000. The largest will cover 8.09 miles of hard-surfaced road in Scotland county, for which the lowest bid of \$133,219 was submitted by Noll Construction Company of Charlotte.



Concrete road in Miller County, Ark.

Gravel road, Lawrence County.

Graded earth road in Greene County, Ark.



## Over \$12,500,000 for Florida Road and Bridge Work Last Year— \$24,000,000 Program Planned for 1927.

By F. W. BERRY, JR., Office Engineer, State Road Department, Tallahassee.

Due to the fact that road building is possible the year round in Florida, contracts are let every month. Contracts awarded the latter part of the year naturally run over into the next year. At the beginning of 1926 the department had under construction approximately 300 miles of road and 5000 feet of bridges at an estimated cost of \$4,500,000.

At the beginning of the year and for the first four or five months there was a freight embargo, and as practically all materials for surfacing in Florida have to be shipped, the department was prohibited from letting or completing any paving. As a consequence our energies were devoted to grading many projects preparatory to paving. Up to December 1, 1926, the State Road Department had let contracts for 320.22 miles of grading and the necessary small drainage structures at a cost of \$3,404,822.28; 199.53 miles of Florida lime rock on previously graded roadbed at a contract cost of \$3,550,688.35; 5.76 miles of sheet asphalt pavement at a contract cost of \$285,230.86; 80.59 miles of plain cement concrete pavement at a contract cost of \$2,365,469, and 9267 feet of concrete bridges at a contract cost of \$1,648,053.10.

Summarizing, we have let contracts for 606.1 miles of road and 9267 feet of bridges at a total contract cost of

miles of right of way, graded and built the culverts on 375 miles of road and surfaced 200 miles of road; this consists of 8.21 miles of concrete, 14.03 miles of sheet asphalt, 98.03 miles of Florida lime rock and 80.10 miles of sand clay.

In addition to the road work, construction of eight important concrete bridges has been under way, these bridges varying in length from 200 feet to 3600 feet.

There will be no let-up in the active road-building which



Sheet asphalt in Polk County, Florida.

has been launched, and in 1927 it is hoped that \$2,000,000 worth of work can be contracted for each month.

The State Road Department of Florida operates on a pay-as-you-go plan and derives its funds from the following sources: One-mill ad valorem tax, 4-cent gasoline tax, gas and oil inspection tax (one-eighth cent per gallon), automobile license, title registration, county donations and Federal aid. The department estimated its resources from the several funds at the beginning of 1926 to be approximately \$14,000,000. For the 11 months of 1926, or to December 1, 1926, the department had actually received from these sources \$14,712,442.08.

From January to November, inclusive, the department received from automobile registration \$4,713,662. Only 75 per cent of the total amount of automobile license fees is received by the department; the remaining 25 per cent, after deducting the cost of collection, is prorated to the counties for road work. So the total amount from this source will be about \$6,500,000. The gasoline tax in 11 months totaled \$7,985,541. This is a three-cent tax; one cent per gallon went to the counties. We probably will not receive any additional automobile license fees for December. However, we should receive approximately \$600,000 from gasoline tax.



Florida lime rock surface treated.

\$11,254,264.54. In addition to this, the department has employed its convict force on the grading of approximately 140 miles of road at an estimated cost of \$1,200,000. In nine months from January to September, inclusive, the department completed the clearing and grubbing of 305



Florida lime-rock surface-treated road in Brevard County, Florida.

## \$8,500,000 Road Program Outlined for Georgia This Year.

By W. R. NEEL, State Highway Engineer, East Point, Ga.

The outstanding feature of the construction work in Georgia in 1926 was the starting of a definite program of connecting up important through routes in the State. All of the road from Atlanta to Macon was placed under contract for paving, and this will be completed in the early part of 1927; this



Old and new bridges on a Georgia road.

will give the longest continuous stretch of pavement in the State, amounting to 103 miles. Also from this point south to Perry, Ga., the gravel base was topped with asphalt for a distance of 16 miles, giving a total of 119 miles south of Atlanta on one of the main routes to Florida. This, together



An improved highway in Newton County, Georgia.

with the 20 miles of pavement north of Atlanta to Marietta, gives a continuous paved road of 139 miles.

On the Coastal highway from Savannah to Brunswick, Ga., and Jacksonville, Fla., one contract was let for approximately

44 miles, and the whole distance from Savannah to Brunswick was covered by contracts for surfacing, with the exception of two stretches of three and four miles, respectively. This distance is 81 miles.

On the Atlanta-Columbus road additional contracts have been let for paving, which gives a continuous paved road of 65 miles, with the exception of one 5-mile project, and on the remaining distance to Columbus a contract was let for paving 11 miles, leaving only 44 miles yet to be paved.

In south Georgia contracts have been let to complete the



Roswell Bridge, connecting Cobb and Fulton Counties, Georgia.

paving from Albany to Thomasville, a distance of 58.5 miles.

The policy of the board for the year 1927 is to continue this program, and during next year additional stretches will be paved and graded on important through routes.

### TOTAL VALUE OF PROJECTS COMPLETED IN 1926.

Type	Mileage	Cost
Graded .....	11.45	\$137,697.45
Topsoil .....	133.15	1,147,240.37
Clay gravel .....	47.51	657,431.61
Waterbound macadam .....	5.8	109,525.42
Penetration macadam .....	6.32	156,293.31
Asphalt .....	19.31	249,572.26
Concrete .....	23.95	661,902.87
	247.49	\$3,119,663.29
<b>BRIDGES.</b>		
Timber .....	4,543	\$219,203.01
Concrete .....	736	79,604.89
Steel .....	414	34,400.00
	5,693	\$333,207.90
<b>PROGRAM FOR 1927.</b>		
Topsoil .....	400	\$2,000,000.00
Clay gravel .....	90	1,350,000.00
Penetration macadam .....	60	1,320,000.00
Asphalt .....	28	672,000.00
Concrete .....	120	3,158,000.00
Total .....	698	\$8,500,000.00

## \$10,000,000 for Building and Maintaining Louisiana Highways.

By NICHOLLS W. BOWDEN, Principal Assistant Engineer, Louisiana Highway Commission, Baton Rouge.

During 1926 the activities of the Louisiana Highway Commission in the construction and maintenance of State highways have been greater than those of any preceding year, and anticipated revenues and present plans indicate that 1927 will surpass 1926. At the beginning of last year Louisiana had approximately 4050 miles of completed highways—mostly of the gravel-surface type—in its State highway system and at the end of the year it had some 4595 miles, 545 miles of highways having been constructed in 1926.

Of the 545 miles of highways constructed during the year, about 16 miles were paved with high-type surface, the remaining mileage being of gravel or shell surface. The newly completed 545 miles of highways were comprised in 90 road projects costing some \$6,650,000 and in 17 separate bridge projects costing about \$750,000, making a total expenditure

for construction work for 1926 of approximately \$7,400,000.

Louisiana maintains its highways intensively, the riding public being assured of a smooth-riding surface throughout



A highway through campus of Louisiana State University.





Gravel-surface highway in St. Tammany Parish, Louisiana.

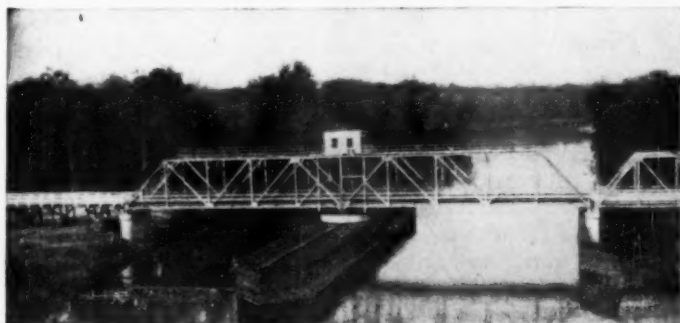
the year. Intensive every-day maintenance is essential on these highways, because they are subjected to traffic far beyond that which this type of highway should be expected to withstand. The total cost of maintenance during 1926 was,

in round numbers, \$2,600,000, or about \$600 per mile, which included extensive resurfacing and some reconstruction work.

Although Louisiana is constructing its gravel-surface type State highways at an average cost of about \$12,000 per mile, and has successfully maintained them at a cost of not exceeding \$600 per mile per year—the cost only recently having approached \$600 per mile—ever-increasing traffic makes a larger paving program essential. Thirty-five miles of pavement were under construction January 1, 1927, and many more miles will no doubt be put under way before the end of the year.

Briefly stated, the construction and maintenance program for 1927 should surpass that of 1926 in expenditures by nearly \$1,000,000, the total expenditures for 1927 probably being near \$11,000,000, as against \$10,000,000 for 1926.

The financing of State highway construction and maintenance work in Louisiana is accomplished by the direct proceeds of a motor-vehicle tax, a gasoline tax of 2 cents per gallon, Federal aid and the contribution of parishes (counties). Under the law, the 2-cent gasoline tax, which during 1926 yielded about \$2,680,000, must be applied wholly to maintenance. The motor-vehicle tax, Federal aid and parish aid is all applied to construction work, and the proceeds from those sources during 1926 totaled some \$7,500,000.



Steel draw-span bridge over West Pearl River, Louisiana. Completed last year by the State Highway Department.



Creosoted timber trestle approaches and steel draw-span bridge over Pass Manchac, La. Length, 2861 feet.

## Over \$10,000,000 for Maintaining and Building Kentucky Roads in 1926—Similar Expenditure Planned for This Year.

By E. N. Todd, State Highway Department, Frankfort.

During the past year the following roads have been constructed: 35.2 miles reinforced concrete, 3.5 miles Kentucky rock asphalt, 21.3 miles bituminous macadam, 64 miles water-bound macadam, 89.5 miles gravel and 234.7 miles grade and drain. The total expenditure on this 1926 construction program is \$8,314,552. In addition to this construction the main-

tenance will cost about \$2,000,000. The State is now maintaining a total mileage of 2451. The department anticipates spending about the same amount of money in 1927 as has been spent during 1926, with a similar number of miles of each type.

The revenue for the annual road-building program is obtained from the following sources: Gasoline tax \$4,750,000.



Kentucky rock asphalt paving near Louisville.



Macadam road near Hodgenville, Ky.

motor licenses \$4,170,000, Federal aid \$1,416,000 and ad valorem tax \$900,000, making a total for construction and maintenance of \$11,236,000.

Kentucky has been behind most of its neighbor States in supplying revenues for constructing and maintaining roads, and no State bond issue has ever been used. In 1920 the one-cent gasoline tax was imposed, Kentucky being the third State in the Union to use this method of securing road-building revenue. In 1924 the one-cent rate was increased to three cents, and again in 1926 the three-cent rate was increased to five cents, Kentucky being the second State to impose this maximum of five cents per gallon tax on gasoline and South Carolina the first.

Kentucky's roads have been wonderfully improved in recent years, and there is now under State maintenance about 2500 miles, about 1000 miles of this being surface-treated macadam.



Concrete pavement in the mountains of Northeast Kentucky.

## \$7,000,000 Expended on Maryland Roads Last Year.

By JOHN N. MACKALL, Chairman and Chief Engineer, State Roads Commission, Baltimore.

In 1926 Maryland spent for maintenance and reconstruction \$4,000,000. Out of this sum concrete shoulders were placed on 85 miles of existing roads. Maryland's maintenance system includes 971 miles of concrete roads, 1044 miles of surface-treated macadam, 456 miles of surface-treated gravel and 38 miles of sheet-asphalt roads, making a total of 2509 miles. This does not include Baltimore city streets which have been built by the Commission and turned over to the city for maintenance.

During 1926 there was expended for construction \$3,000,000, of which \$640,000 was derived from the Federal Government as Federal aid, \$600,000 from the counties and the

Baltimore city. This year marked the completion, including the construction of an overhead crossing of the Pennsylvania Railroad at Collington, of the National Defense highway, a direct road between the capital of the nation and the capital of the State.

During 1927 there is expected to be available for construction approximately \$3,000,000, including the State bond issue, county money and the Federal-aid appropriation. This will be used, as last year, for the construction of concrete, macadam, gravel and asphalt roads and for bridge construction. There will be expended for maintenance and reconstruction approximately \$4,000,000 to be derived from the registration fee on motor vehicles and the gasoline tax.

The Commission contemplates establishing during 1927 a system of route numbering and will mark all Federal and State roads with these route markers.

As to how this State finances its work on the highways, we will assume that the next legislature approves of the bond issue of \$6,000,000 for road construction during the next four years. As Baltimore city will receive 20 per cent of this amount, or \$1,200,000, the remainder for "State roads" will be \$4,800,000, or \$1,200,000 yearly. This \$1,200,000 is to be matched one-half by the 23 counties of the State and one-half by the Federal Government, this giving us \$2,400,000 yearly. Now, if we take into consideration the allotment to Baltimore city amounting to \$300,000 annually, all work in Baltimore city being done by the State Roads Commission, we will have a total of \$2,700,000, to which we will assume a yearly appropriation of \$300,000 for bridges, making the approximate gross total for construction during the year of 1927 \$3,000,000.

The maintenance and reconstruction funds are provided by the motor-vehicle receipts and gasoline tax. These figures at present approximate from the motor-vehicle-license fees \$2,300,000 and from the two-cent gasoline tax \$1,700,000, or a total of \$4,000,000 annually.



Concrete road on Crain Highway in Maryland.

balance from the State. This sum constructed 67 miles of concrete roads, 14 miles of macadam roads, 21 miles of gravel roads and 3.4 miles of asphalt streets in Baltimore city. Also out of this fund eight one-way bridges were replaced with modern reinforced concrete or steel structures, and railroad grade crossings were eliminated at the following points: Collington and Bethesda, Md., and Baker street in



Macadam reconstruction, Harford Road, Harford County, Md.



Concrete shoulders placed to widen the Liberty Road in Maryland.



## Over \$24,000,000 for Missouri Road Construction and Maintenance in 1926.

By B. H. PIEPMEIER, Chief Engineer, State Highway Department, Jefferson City, Mo.

The Missouri primary State roads system, concrete or equivalent, totals 1545 miles, estimated to cost \$69,000,000. The secondary system of gravel, concrete, etc., consists of 6095 miles, estimated to cost \$137,000,000. Thus the total State highway system, which is to be completed in about 1934, comprises 7645 miles of roads, estimated to involve an expenditure of \$206,000,000. Federal aid is estimated to total \$40,000,000, and the balance of funds, \$166,000,000, will be furnished by motor-vehicle owners through license fees and gasoline tax. The total value of all work placed under contract to December 1, 1926, is \$106,092,000.

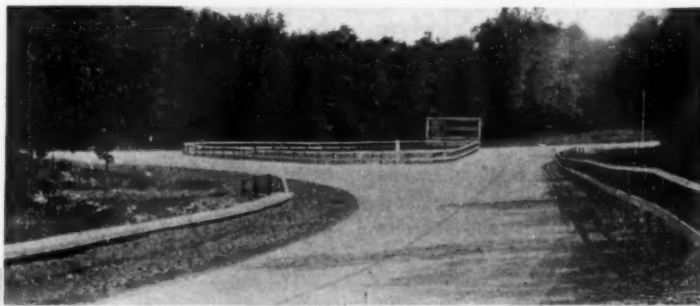
The total authorized State bond issue is \$60,000,000, and \$55,000,000 of this issue have been sold. To December 1 a total of 3336 miles of hard-surfaced roads had been finished

during 1926 was \$2,339,824, and fixed expenses, such as administration, sinking fund and interest to November 30 totaled \$6,763,795. The amount paid out for construction during 1926 to November 30 amounted to \$21,864,063.

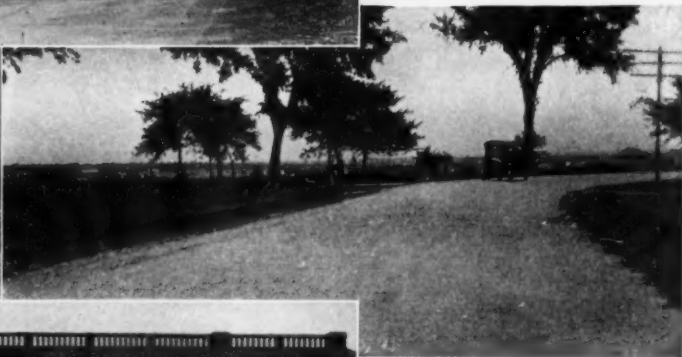
The total number of automobiles registered in Missouri in 1925 was 605,483, and the registration in 1926 to December 1 was 645,062.

Basic revenues come from automobile license fees, gasoline tax, corporation registration fees and the sale of option stamps. Incidental revenues are made up of such items as interest on daily bank balances, sale of blueprints, refunds, sale of Federal equipment and miscellaneous. Advanced revenues include proceeds of bond sales and Federal aid. It is necessary to provide from these funds such expenditures

Right—Concrete pavement, intersection of U. S. Routes 60 and 65, Greene County, Missouri.



Below—Typical gravel-surfacing of Missouri roads.



Above—Bridge over Ball Creek in Taney County, on Route 76.



Left—Overhead crossing near Syracuse in Morgan County.

and 339 miles were under contract, in addition to 1150 miles of State roads graded and under contract for surfacing. The total number of miles of hard-surfaced roads in the State system constructed by counties or other local subdivisions in addition to that built by the State is 1600 miles, giving a total of 4936 miles of hard-surfaced roads in the State. During 1925 there was paid out for maintenance \$1,924,000, and in the first 11 months this year \$1,732,000 was spent for this work.

The total revenue for the first 11 months of 1926 was \$36,818,150, made up as follows: Motor-vehicle registration fees, \$7,827,574; gasoline tax, \$5,260,416; corporation registration fees, \$92,970; sale of option stamps, \$6665; Federal aid \$3,674,301; sale of road bonds, \$15,127,343; incidentals, \$555,790; balance in State road fund December 31, 1925, \$4,272,582. The appropriation for State road maintenance

as administration, retirement of bonds, interest on bonds, cost of collection, deficiencies and reliefs. The remainder of the funds is used for road construction and maintenance.

It is estimated that this year about \$13,000,000 to \$14,000,000 will be available for road construction. The last block of the \$60,000,000 bond issue will be sold. The revenues for future years will be curtailed to about \$10,000,000 for about 1928, with approximately \$1,000,000 for each year thereafter. The gasoline tax for 1926 will approximate \$5,500,000, and it is estimated to total \$6,000,000 for this year. The automobile fees last year ran close to \$8,000,000. For 1927 it is estimated automobile fees will reach \$8,400,000.

The Warren County Board of Supervisors, Vicksburg, Miss., will receive bids until January 11 for the purchase of \$210,000 of road and bridge bonds.

## \$4,500,000 Spent on Mississippi Roads in 1926—This Year's Program Involves Expenditure of \$4,780,000.

By G. B. DENHAM, Office Engineer, Mississippi State Highway Department, Jackson.

During 1926 final completion and acceptance was given to the following mileage of various classes of roads: Graded and drained, 30.4 miles; gravel-surfaced, 244.2 miles; concrete-surfaced, 56.9 miles, and separate bridges, 0.2 miles, making a total of 331.7 miles.

Work now under construction, which will be carried over for completion this year, is as follows: Graded and drained, 149.1 miles; gravel-surfaced, 120.9 miles; concrete, 47 miles; brick, 0.5 miles, and separate bridges, 2.3 miles, making a total of 319.8 miles.

We expect to begin work during 1927 on roads as follows: Graded and drained, 81.5 miles; gravel, 117.6 miles; pavement, 7 miles, and separate bridges, 1.4 miles, making a total of 207.5 miles.

The total expenditures for 1926 are approximately as follows: Construction, \$2,750,000; maintenance, \$1,750,000. Expenditures for 1927 will approximate \$2,780,000 for construction and \$2,000,000 for maintenance.

The above constitutes the only work done under the supervision of the State Highway Department; probably at least as much work is done by the counties independently.

Maintenance funds are secured by a gasoline tax of 4 cents a gallon, 50 per cent of which goes to the State Highway Department, and equals about \$2,000,000 annually. The construction fund mentioned will be secured as Federal aid in the approximate amount of \$1,293,000 and the balance from the various counties of the State. The State Highway Department has no State construction fund at its disposal.

## \$23,000,000 Cost of 1080 Miles of Highways Completed Last Year in North Carolina.

By H. K. WITHERSPOON, Assistant to Chairman, State Highway Commission, Raleigh.

Work on the State highway system of North Carolina has kept pace during the past year with the progressive strides the State has made, and is making, in all lines, and the close of the year finds a large mileage of completed road work on

bond issue, Federal aid and county loans or gifts. Funds derived from the bond issue, which at present aggregates \$85,000,000, are allocated to the various counties on the basis of the ratio of area, population and road mileage, and the



In the Land of the Sky near Asheville.



The Central Highway near Greensboro, N. C.

State highways. From the tabulation at the close of this article it will be seen that approximately two-thirds of the work completed during 11 months of the year was of the hard-surfaced type.

Highway construction on the State system is financed by

plan has proven very satisfactory; this is the same method as is used in the distribution of Federal-aid funds by the Federal Government to the various States.

Construction work completed, under construction or ready to be let has absorbed practically all the existing bond issue



An asphalt road near Greensboro, N. C., Route No. 10.



Concrete road between Wilmington and Wrightsville Beach, N. C.



and loans from counties; therefore, the amount of new construction to be placed under way in 1927 will depend largely upon the action of the next session of the General Assembly, which convenes early in January. An additional bond issue is practically certain, and while no recommendations have been made by the Highway Commission, it is expected that an issue of \$30,000,000 will be authorized. Revenue from the present tax of four cents per gallon on gasoline and from automobile registration will more than provide for the interest and sinking fund on the present bond issue and the proposed issue and will also provide funds for the maintenance of the roads on the State highway system.

Approximately 400,000 cars and trucks were registered in North Carolina the past year. Funds derived from this source together with the gasoline tax afforded a revenue of

approximately \$13,000,000. These funds are used for the retirement of outstanding bonds, interest, operating expenses and maintenance of roads on the State system. At present there are 6382 miles of State roads under maintenance and these roads are kept in first-class condition at all times. The work is financed entirely from revenue from gasoline tax and automobile licenses, and motorists of the State are thoroughly satisfied with the plan.

NORTH CAROLINA HIGHWAY WORK COMPLETED IN 1926.		
Type	Mileage	Cost
Grading .....	228.0	\$2,280,000
Topsoil, sand clay and gravel.....	117.7	1,412,400
Concrete .....	340.4	11,914,000
Macadam .....	21.6	432,000
Asphaltic concrete .....	165.9	5,806,500
Sand asphalt .....	55.0	935,000
Road oil treatment.....	152.6	381,500
Brick .....	.....	.....
	1,081.2	\$23,161,400

## \$12,000,000 for Oklahoma Highway Work in 1926—Similar Expenditure for 1927.

By J. M. PAGE, State Highway Engineer, Oklahoma City.

The Oklahoma State Highway system consists of 5787 miles of highways which were designated by the State Highway Commission in accordance with legislation enacted in 1924. Revenues provided for construction and maintenance consist of proceeds from two-thirds of a three-cent gasoline tax, totaling almost \$4,000,000 a year, and 40 per cent of the automobile license fees, amounting to about \$2,500,000 annually. The remainder of these two sources of revenue is distributed among the counties. There is also available the annual allotment of Federal aid, amounting to about \$1,752,000, and the proceeds of county bond issues and other county revenues made available for participation with State funds in the construction of State highways. The total of these revenues provides annually approximately \$12,000,000, of which \$2,000,000 is applied to the maintenance of the State highway system and \$10,000,000 to administration and construction.

The system is divided into maintenance sections of approximately eight miles each. On each section there is employed a maintenance patrolman, who is a full-time employee, which

with standard design and practice on those sections of the State highway system which, because of the centers of population served and the volume of traffic carried, must be considered of primary importance. Our standard width of roadbed is 30 feet from shoulder to shoulder. This provides for an 18-foot width of pavement, with shoulders 6 feet wide on either side, which makes it possible for vehicles stopping in the road for any reason to get entirely off the paved area, thereby greatly reducing the accident hazard.

About 600 miles of standard roadbed has been constructed on the State highway system in addition to those sections



Eighteen-foot concrete road in Garfield county, Oklahoma.

results in each mile of the State highway system receiving daily patrol maintenance.

Standard highway route markers have been erected on all State highways, which are supplemented by a carefully planned and complete system of caution and direction signs. In addition to this, standard United States highway route markers have been erected on those routes which have been designated as parts of the interstate or national highway system.

During the past year much progress has been made in properly locating and constructing the roadbed in accordance



Bridge completed last year across North Canadian River, Oklahoma county, Oklahoma.

which have been paved. On this recently constructed roadbed a very light surface of gravel has been placed, which under daily maintenance will serve to effect an all-weather road until such time as finances are available to build a standard form of pavement.

We have four survey parties continuously in the field and are pushing vigorously the work of properly locating the highways. Many miles of distance have been eliminated by careful location, uninfluenced by the circuitous or section line location of the present road.

Because of the fact that Oklahoma is at the present time in the early stages of its development, a much better opportunity is afforded to design and construct a properly located State highway system than is possible in the older States where property developments along the old-established routes is extensive.

Many unnecessary railroad grade crossings have been eliminated, square turns and short curves have been done away with. Excessive grades have been reduced and unsatisfactory drainage conditions have been corrected, and the

cost of construction in general greatly reduced by properly locating our highways.

Due to the very efficient functioning of the Highway Department Testing Laboratory, the quality of materials entering into our construction has measurably increased; and, although the provisions of our specifications are rigidly enforced, our construction costs have not increased, but show a general but slight decline during the past three years.

Highway construction using convict labor has proven to be a successful venture, and two convict camps with approximately 75 men each have completed approximately 20 miles of heavy mountain construction, together with necessary drainage structures. The cost of this construction, based upon average unit prices, compares favorably with contract construction.

The cost of this construction as given refers to the surfacing only and does not include the construction of the grading and small drainage structures, the cost of which in general averages approximately \$5000 per mile throughout the State, exclusive of the cost of right of way.

A number of large bridge structures were constructed in 1926. The usual types of bridges are creosoted timber pile

trestles, reinforced concrete pile trestles, steel I-beam spans constructed on reinforced concrete substructures and carrying concrete floor and handrail, steel truss spans erected on reinforced concrete substructures which carry a concrete roadway. Our standard width of roadway on major bridges is 18 feet on spans of 60 feet and over, 20 feet on spans between 20 and 60 feet and the full width of the roadbed on lesser structures. The total value of our major bridge construction during the past year is approximately \$1,610,315.04.

During the past year, in addition to the standard roadbed above referred to, there has been completed the following mileage of pavement listed in accordance to type constructed:

	Mileage	18-ft. pavement—Average cost per mile
Concrete .....	62	\$22,048
Asphalt .....	19.3	30,210
Brick .....	5.4	36,676
Gravel .....	30	4,685
A light application of gravel as maintenance feature, 100 miles.		

During 1927 the proposed program of the department is simply a continuation of the 1926 program and approximately the same amount of work will be accomplished.

## \$8,750,000 for South Carolina Roads and Bridges Built Last Year.

By BEN M. SAWYER, Chief Highway Commissioner, Columbia.

Our highway program for 1926 embraced an estimated expenditure for maintenance of approximately \$2,425,000 and for construction of approximately \$6,325,000. For the first ten months of the year we spent about \$5,105,000 on construction and about \$1,840,000 for maintenance.

Last year about 90 miles of hard-surfaced roads were com-

pleted during the year numbered 68, with a total length of 16,710 feet, estimated to cost \$1,000,000. Designs were prepared for 83 structures, 19,540 feet in aggregate length, estimated to cost \$1,150,000. In the preceding year 78 bridges, with a total length of 17,294 feet, were completed at a cost of \$1,782,000, and designs were made for 94 structures, totaling 24,674 feet and estimated to cost \$1,916,000.

Roads maintained in 1926 included 462 miles of hard-surfaced type and 4416 miles of earth type, the total expenditure being \$1,525,000.

The following program has been adopted for 1927:

Hard-surfaced roads, 250 miles, to cost \$7,500,000; earth-type roads, 350 miles, to cost \$1,750,000; 11 major bridges



Sheet asphalt pavement in South Carolina.

pleted at a cost of about \$2,500,000, and 300 miles of earth roads costing about \$1,500,000 were completed. In 1925 the mileage completed consisted of 75 miles of hard-surfaced roads and 288 miles of earth roads costing about \$4,435,000.

In 1926 a total of 78 bridges, aggregating 21,615 feet, were completed at a cost of \$2,220,000. Bridges let to contract



Sand-clay road in South Carolina.

to cost \$575,000 and smaller bridges to cost \$425,000; double-surface treatment, 125 miles, to cost \$300,000; oil treatment, 180 miles, to cost \$175,000, and maintenance work, 5250 miles, to cost \$2,220,000.

This State is financing the construction of its highways on the pay-as-you-go plan, under an Act passed in 1924. Under this Act it was estimated that approximately \$5,750,000 would be received by the highway department last year for road purposes, divided as follows: Motor-vehicle licenses, \$2,000,000; gasoline tax, \$2,750,000; Federal aid, \$1,000,000. In addition to this, it was expected that about \$3,000,000 would be advanced to the department by the counties.



The old and new on a South Carolina highway.



## Over \$13,000,000 for 1926 Road Building Work in Tennessee— \$13,500,000 Program for 1927.

By J. M. FARRAR, Department of Highways and Public Works, Nashville, Tenn.

Crowding the past two years to overflowing with highway improvements of all kinds, Tennessee has closed a biennium of achievement and success. In 1925 there were let to contract 392.46 miles of new construction of all types, valued at approximately \$7,605,664.95, while in 1926 there were awarded contracts for 491.09 miles of construction at an estimated value of \$9,127,175.28. The two years surpass any previous two-year record.

The construction work has ranged from grading and drainage to the highest types of surfacing, and from small culverts

through routes—those which serve the local and tourist travel as well—and later completing the secondary routes, meanwhile keeping all roads on the State system in as good a condition as possible.

With an increased proportion of high-class surfacing, there has been a corresponding decrease in the proportion of the



Carpet-treated road on Route 24, Wilson County, Tennessee.

to big concrete and steel bridges. Construction has been so distributed in Tennessee that the principal gaps on all through routes have been closed. While contracts have not yet been awarded for the few remaining gaps, they have been kept serviceable the year round by intensive State maintenance, except where unusual conditions prevail. Thus the department is following the policy announced several years ago of pushing toward completion all projects on principal



Maintained gravel road in Tennessee.



This bridge solves a difficult drainage problem on the Memphis-Bristol Highway, Tennessee.

lower types. Much of the work of the past year and that of 1925 has been the surfacing of projects graded and drained in years previous.

The announcement in May, 1925, that the Department of Highways and Public Works would take over the entire State system of approximately 5000 miles for maintenance marked one of the greatest single forward steps in the history of highway development in Tennessee. Old roads, full of chug



A concrete pavement between Jackson and Humboldt, Tennessee.

holes, rough and muddy, have been transformed into smooth-riding roads, serviceable the entire year. The main object has been to provide for the ever-increasing traffic. Thus, as soon as the old roads became travelable reconstructive maintenance began, and soon the forces were at work straightening out curves, providing better alignment and safer conditions. Temporary means of transportation on good-riding roads was then possible, and the demand for expensive road construction was lessened until such time as this could be done with

economy and ease. The department considers maintenance as of prime importance.

Several years ago it was realized that an annual income of at least \$10,000,000 would be needed for the State highway system. The estimated income from the sources of auto registration, gasoline tax, Federal aid and county aid, together with \$5,000,000 borrowed under provision of Chapter 272, Public Acts of 1925, and miscellaneous receipts, made a total income of \$13,195,722.18 for the fiscal year ending June 30, 1926. The income from those sources was as follows: auto registration, \$3,362,726.82; three-cent gasoline tax, \$3,915,106.72; Federal aid, \$2,377,547.53; county aid, \$2,849,466.43; borrowed under provision of Chapter 272, Public Acts of 1925, \$5,000,000 net; miscellaneous receipts, \$190,874.68.

Looking to the program for 1927, the department's income from the current revenues of the three-cent gasoline tax, present motor-vehicle tax and Federal aid is estimated to be \$10,000,000. If county aid is continued on the present basis, the total program of maintenance and construction for this year will be approximately \$13,500,000.

The following gives a summary by types of all projects let to contract last year and during the period 1918 through 1926:

#### SUMMARY BY TYPES.

All projects let to contract in 1926 as of December 18, 1926.		
Type	Miles	Cost
Grading and drainage.....	341.277	\$3,831,641.27
Base course without surface.....	6.846	116,404.43
Cement concrete .....	104.901	2,856,381.62
Bituminous macadam .....	12.121	180,860.84
Asphaltic concrete .....	5.228	174,960.13
Rock asphalt .....	5.594	219,272.53
Chert or gravel.....	15.120	111,220.52
Bridges .....	.....	1,636,433.93
Total .....	491.087	\$9,127,175.28

This mileage includes 103.855 miles of projects which overlap previous projects.

#### SUMMARY BY TYPES.

All work let to contract, 1918 to December 18, 1926.		
Type	Miles	Cost
Cement concrete .....	316.652	\$9,740,653.47
Bituminous concrete .....	82.780	2,541,178.53
Sheet asphalt .....	33.770	248,165.75
Rock asphalt .....	92.088	2,778,697.02
Bituminous macadam .....	466.088	11,148,689.31
Waterbound macadam .....	140.908	1,830,079.59
Surface treatment and miscellaneous.....	233.174	783,422.75
Gravel or chert.....	419.108	3,286,393.30
Base .....	61.747	905,350.69
Grade and drain.....	972.994	9,570,604.00
Bridges .....	.....	6,749,874.79
Total .....	2819.309	\$49,583,145.20

This mileage includes 334.620 miles of projects which overlap previous projects.

## \$23,800,000 for Texas Highways in 1927.

Texas looks forward to big things in highway construction this year. There are naturally bad gaps in some of the most important highways of the State. But much has been accomplished and there are 10,000 miles of highway built for



Reinforced concrete approach to the Colorado River Bridge, near Lagrange, Texas.

use in all kinds of weather and 3000 more miles kept in passable condition. Much of this progress was made between 1921 and 1924. Five years ago there were about 2000 miles of completed roads and 467,000 motor vehicles registered in the State. Last May the number of registered vehicles had



Asphalt road surface and wide concrete shoulders on a Texas highway.

reached a total of 1,045,600. During the years 1921 to 1925 strenuous efforts were made toward completing the trunk lines.

Under Governor Neff's administration the business of correlating the highways and the public parks was stressed. As a result 150 recreation spots were donated to the State for the good of the traveling public. These parks are located all over the State along the State highways, and there is a possibility of the parks being placed under the supervision of the State Highway Department to make them more accessible and thus to stimulate the work of beautification.

Several counties have built up with money provided by bond issues networks of splendid boulevards running in all



An 18-foot concrete pavement in Texas.

directions. In Bexar county there is a hard-surface road to almost every farm, and the residents say that this county has more miles of paved highways than any other in the United States.

It is estimated that approximately \$23,830,000 will be expended for road work on State highways during 1927, as follows: Construction, \$14,800,000; maintenance and equipment, \$8,500,000; department operation, \$530,000.

The estimated revenue this year is as follows: Automobile license fees, \$10,500,000; three-fourths of a one-cent gasoline tax, \$4,000,000; Federal aid, \$4,800,000; county funds from bonds and warrants issued, \$4,500,000; miscellaneous, \$100,000.



# **\$18,000,000 for Roads and Bridges Completed in West Virginia Last Year.**

By C. P. FORTNEY, Chairman, State Roads Commission, Charleston, W. Va.

West Virginia's outstanding achievement in road building last year was the completion of hard-surfaced roads linking together all of the larger cities of the State. A great many of the smaller cities and towns are also linked by the highways connecting the main centers of population.

During the year the final sections of paving were completed on a combination north-and-south through highway entirely across West Virginia, from the Ohio line at Chester to the Virginia line at Bluefield. This gives West Virginia two hard-surfaced trans-State routes, the other leading east and west and connecting with the road systems of Virginia and Kentucky.

Roads completed on the State system during the year had a total mileage of 632.8. Their total cost was approximately \$17,120,000. There were also completed on the State system 33 bridges costing approximately \$796,000. Of the roads completed, 426.94 miles were hard-surfaced and 205.86 miles graded. Besides this completed work, the State has under

in January. Virtually all the State's road bond issue of \$50,000,000 is now expended or under contract. Under the road law, the sum in the sinking fund may be used to redeem the old bonds, after which an equivalent face value may be reissued and sold to bring the sum outstanding up to the Constitutional limit of \$50,000,000. If the legislature should so vote, there will be available a little more than \$7,000,000 from this source, in addition to Federal aid of \$793,936.

By types, hard-surfaced roads completed during the year were: Bituminous macadam, 212.96; concrete, 122.49; brick,



Widening a narrow concrete road built several years ago in McDowell County, W. Va.

construction and is carrying over into this year a total of 444.89 miles, consisting of 323.25 miles of grading and 121.64 miles of hard surfacing. The estimated total cost of this work is \$8,900,000. Work is also being carried over on 11 bridges, the total cost of which will be approximately \$375,000.

New work to be placed under contract in 1927 will depend largely upon the action of the State legislature, which meets

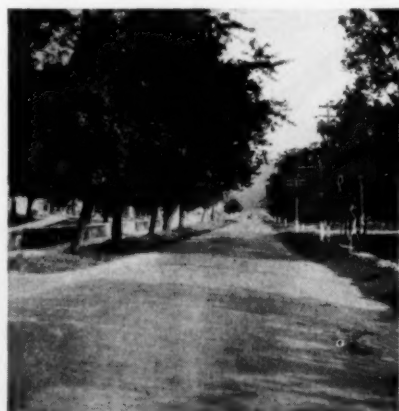


Typical small bridge in West Virginia over Opequon River.

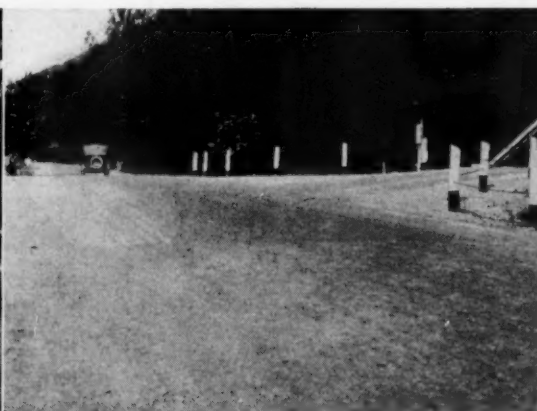
5.41; bituminous concrete, 6.99; gravel, 73.31; shale, 5.78. Mileages carried over into 1927: Bituminous macadam, 44.05; concrete, 17.52; gravel, 68.36; shale, 9.71.

Funds for State road work come from proceeds of State road bonds and Federal aid. The total from both sources paid out during 1926 for road and bridge work was around \$10,593,000, and the State has under contract work that will require an additional expenditure of approximately \$4,600,000. Maintenance expenditures were approximately \$1,850,000 additional. Federal aid for the year was \$793,936.

Revenue to meet interest and sinking fund requirements of State road bonds is derived from two sources—motor vehicle license fees and the gasoline tax of 3½ cents a gallon. These two sources have also produced sufficient money to pay road maintenance costs and the overhead expenses of the State Road Commission. In other words, motor vehicle fees and



Asphalt on gravel road in Hampshire County, W. Va., east from Romney.



Intersection in Mineral County—laid in blocks with warped surfaces to care for super-elevation.



Project 78 near Beverly in Randolph County, W. Va.

the gasoline tax have paid all costs of the State road system to date. The legislature has authorized the Board of Public Works to levy a general property tax, if necessary, to pay interest and provide the required sinking fund for State road bonds, but no such tax has ever been necessary. A State road bond issue of \$50,000,000 was voted in November, 1920. Virtually all of these bonds have now been sold. The bond issue is in a sense a revolving fund, as the law provides that whenever bonds are redeemed other bonds of an equivalent face value may be issued and sold.

## \$15,800,000 for Virginia Road Work Last Year—\$16,200,000 for 1927 Program.

The following is the mileage of State highways completed by types during the fiscal year ending June 30, 1926: Concrete, 62; bituminous macadam, 57; surface-treated macadam, 25; gravel, 29; soil, 16; sand-clay, 5, and graded and drained, 39.

Outstanding accomplishments were the completion of the concrete road from Richmond to Washington and the construction of the bridge over the Rappahannock River at Tappahannock. This bridge is over 5400 feet long and has a reinforced concrete floor and railing supported on creosoted pile bents. There is a 240-foot swing span. The completion of the highway from the West Virginia line north of Winchester



Concrete road between Fredericksburg and Ashland on the Richmond-Washington Highway in Virginia.

to Bristol gives a continuous stretch of hard-surfaced road over 500 miles long.

The chief feature of the 1927 program will be the completion of the concrete road from Richmond to the North Carolina line, giving a concrete road all the way through Virginia from Washington south.

The total estimated revenue for road improvement last

West Virginia's receipts from motor-vehicle licenses in 1926 were approximately \$3,740,000 and the gasoline tax produced approximately \$2,900,000. It should be stated, in this connection, that many of the counties and county districts of West Virginia have voluntarily raised funds through local bond issues to be spent on State roads within their borders. This is merely a matter of choice to hasten the completion of the roads. Roads not included in the State system are financed by the various counties and districts by levies or bond issues.

year from State sources and from the money that the counties have to advance to meet the portion put up by the State for State-aid work, which is 50 per cent, is \$15,800,000. This does not include the county levy for purely district and local work.

This year, it is estimated, this will amount to \$16,200,000. For construction of new State highways in 1927 approxi-



Bridge over the North Anna River on the Washington-Richmond Highway in Virginia.

mately \$10,500,000 will be available, and about \$3,000,000 will be available for maintenance. It is estimated that the 3-cent gasoline tax will bring in for 1927 for State construction work about \$4,370,000, and the counties will receive for State-aid roads about one-half of this amount of money. It is estimated that \$3,700,000 was received from the gasoline tax for State highway construction in the calendar year 1926, and the counties received approximately one-half this amount. The automobile license fees for 1926 totaled about \$4,500,000—\$3,000,000 for maintenance and \$1,500,000 for betterments.



Bridge at Emporia over the Meherrin River in Virginia.



## To Begin Work in March on \$25,000,000 Port Project in Baltimore.

Construction work on the initial unit of a \$25,000,000 port development project for Baltimore will begin by the first of March, according to the terms of an agreement executed by officials of the city and representatives of corporations interested in the project. This unit will cover the construction of a viaduct to carry Hanover street over the tracks of the Baltimore and Ohio Railroad Company and of the Western Maryland Railway Company. The approach to the viaduct will begin north of Wells street, while the Baltimore and Ohio section of the structure will extend from Wells street to the center line of McComas street and the Western Maryland section from the center line of McComas street to Cromwell street. Half the cost of the Western Maryland section will be borne by the city, which will also raise grades of Hanover street, McComas street and Dickman street to meet the viaduct. The Baltimore and Ohio Railroad Company will bear the cost of half the completed structure.

Pacts under which the project will be undertaken were signed by officials of the city and representatives of the Baltimore and Ohio Railroad Company, Western Maryland Railway Company, Consolidated Gas, Electric Light and Power Company and the United Railways and Electric Company. On behalf of the Port Development Commission, John E. Greiner, its president, signed an agreement with Maxwell C. Byers, president of the Western Maryland Railway Company, for the construction of a \$4,000,000 merchandise pier on McComas street, which will be one of the major items of improvement. The agreement covering construction of the proposed viaducts was signed by Mayor Howard W. Jackson on the part of the city and by George M. Shriver, senior vice-president of the Baltimore and Ohio Railroad Company, and Mr. Byers, president of the Western Maryland, on the part of the railroads.

Negotiations covering details of the project embrace the following items: Elimination of grade crossings on Hanover street, which will be effected by the proposed viaduct; exchange of properties by the Baltimore and Ohio and Western Maryland railroads; revising pending obligations between city and Baltimore and Ohio Railroad Company, deeding of waterfront property by the railroad to the city without cost and contribution by the railroad of \$120,000 for the construction of the new Russell street boulevard; construction of the proposed \$4,000,000 Western Maryland pier; interchange of property by the city and the Consolidated Gas, Electric Light and Power Company to clear the way for the proposed new McComas street and placing the gas company's holdings entirely on the south side of the street, and completing negotiations with the United Railways and Electric Company for closing a number of streets in the development area at the company's expense and for the operation of street cars on Health and Barney streets.

The proposed pier will be constructed under the supervision of the Port Development Commission, while the structure will be designed by the Western Maryland Railway Company. Bernard L. Crozier, chief engineer of Baltimore, will supervise construction of grade crossings and general street work.

## Larger Acreage in Winter Wheat Last Year—Over Half of Increase in the South.

An area of 41,807,000 acres of winter wheat sown last fall is estimated by the Crop Reporting Board of the Department of Agriculture. This area sown is 5 per cent more than the revised estimate of 39,799,000 acres sown in the fall of 1925. The sowings in the fall of 1924 were 39,848,000 acres.

Winter damage during the past 10 years has caused an

average abandonment of 12.8 per cent of the acreage sown to winter wheat.

It is of interest to note in this connection that the 16 Southern States in 1926 planted 11,431,000 acres in winter wheat, or an increase of 1,091,000 acres over the area sown in the fall of 1925. Therefore, the increased acreage in winter wheat last year in the South is more than one-half of the total increase of 2,008,000 acres for the whole country. Increases are reported in every Southern State, with the exception of Maryland and West Virginia, which are slightly below the acreage of 1925, while Mississippi reported the same acreage for 1926 as that of last year, and Texas, with an increase of 460,000 acres, shows the largest gain of any Southern State.

## Naval Stores Consumption and Production.

According to figures compiled by the Bureau of Chemistry, United States Department of Agriculture, industrial concerns using turpentine and rosin in their products consumed during the calendar year 1925 a total of 7,174,115 gallons of turpentine and 1,004,304 barrels of rosin, together with 49,790,087 gallons of mineral-oil thinners. The distribution of these data by industries for 1925 and 1924 are shown in the following table:

Industry	1925*		
	Turpentine, gallons	Rosin, barrels	Mineral spirits, gallons
Paper and paper size.....	5,874	313,365	.....
Soap .....	3,540	281,230	72,448
Paint and varnish.....	5,705,414	228,207	49,079,087
Shoe polish .....	824,463	338	2,841
Printing ink .....	10,879	14,195	18,986
Oils and greases.....	124,785	53,616	71,652
Sealing wax, pitch, insulations and plastics .....	61,058	46,564	240,954
Matches .....	226	2,807	.....
Linoleum .....	4,165	37,747	115,986
Chemicals and pharmaceuticals..	77,041	2,988	.....
Automobiles and wagons.....	276,570	360	117,490
Iron, steel and brass.....	22,024	20,748	31,958
Shipyards .....	15,750	76	21,810
Miscellaneous .....	42,326	2,063	16,875
Total, 1925 .....	7,174,115	1,004,304	49,790,087
Total, 1924 .....	6,739,621	864,841	43,460,115

\*Consumption data are obtainable only for the calendar year.

By including certain statistics on production compiled and published by non-Governmental agencies, together with foreign trade statistics furnished by the Bureau of Foreign and Domestic Commerce, the Bureau of Chemistry is able to present a report on production, industrial consumption, exports and stocks of turpentine and rosin for the season 1925-1926, ending March 31, 1926.

## PRODUCTION OF GUM TURPENTINE AND GUM ROSIN.

	1925-1926		
	Production.		
	Turpentine, 50-gallon casks	Rosin, 500-pound barrels	No. crops worked
Alabama .....	31,114	102,775	931.8
Florida .....	172,981	570,837	5,562.7
Georgia .....	206,035	679,915	5,796.6
West Louisiana and Texas.....	17,976	59,320	334.3
East Louisiana and Mississippi....	40,309	133,019	683.0
North and South Carolina.....	10,000	33,000	355.0
Total .....	478,445	1,578,866	13,663.4

Measured in gallons, the production of turpentine from gum in the South amounted to 23,922,250 gallons for the past season, as compared with 26,072,200 gallons the year before when 1,720,765 barrels of rosin were produced.

In addition to gum turpentine and gum rosin, which are produced from the oleo-resin obtained from the living tree, considerable quantities of wood turpentine, wood rosin and pine oil are produced from resinous wood by the steam-solvent and the destructive distillation industries. The total

production of all three classes during the past two seasons is shown in the following table:

	1925-1926		
	Turpentine, gallons	Rosin, barrels	Pine oil, gallons
Gum products*	23,922,250	1,578,866	.....
Steam solvent products.....	2,932,119	284,504	1,862,899
Destructively distilled products†...	407,056	.....	86,450
Estimated reclaimed from dross....	.....	40,000	.....
Total, 1925-1926 .....	27,261,425	1,903,370	1,949,349
Total, 1924-1925 .....	29,333,450	2,018,296	1,715,948

\*Compiled by J. E. Lockwood, Hercules Powder Company, Wilmington, Del.

†Compiled by Bureau of Chemistry.

#### SUMMARY NAVAL-STORES PRODUCTION, CONSUMPTION AND SUPPLIES.

	1924-25		1925-26	
	Turpentine, gallons	Rosin, barrels	Turpentine, gallons	Rosin, barrels
Stocks at close of previous season .....	5,326,581	899,347	5,030,604	646,088
Production .....	29,333,450	2,018,296	27,261,425	1,903,370
Imports .....	177,675	1,574	287,379	17,068
Total supplies.....	34,837,706	3,019,217	32,579,408	2,566,526
Exports .....	12,485,150	1,463,168	11,361,500	1,083,131
Industrial consumption .....	6,739,621	864,841	7,174,115	1,004,304
Stocks at close of current season .....	5,030,604	646,088	4,052,834	444,221

Stocks include those on hand at plants of consumers.

From the data on turpentine shown in the foregoing table it is possible to arrive at a rough approximation of the quantity of turpentine used in this country by painters for thinning paint and varnish prior to applying it, and for the many and varied household purposes. This quantity is in the neighborhood of 10,000,000 gallons annually. This is obtained by deducting the totals for exports, industrial consumption and remaining stocks from total supplies. Rosin, however, is practically all consumed in industrial manufacturing processes. The total quantity used by individuals or firms in a small way for various purposes is relatively unimportant. The difference between total supplies and the totals for consumption, exports and stocks, as shown by the figures in the table, is probably due to incomplete figures on consumption and stocks. These are being obtained more completely from year to year.

#### To Operate Big Texas Ranch.

Stamford, Texas, December 31—[Special.]—Incorporation of the Swenson ranch interests into the Swenson Land and Cattle Company, with a capital stock of \$1,000,000, has been effected. The company's headquarters are located at Stamford, and its incorporators include A. J. Swenson, W. G. Swenson, R. M. Swenson, A. M. G. Swenson and J. E. Swenson, each of whom paid \$200,000 into the company. The Swenson ranch is situated near Stamford, and the vast property is to be turned over by the elder Swensons of New York to the younger members of the family who have organized the company to operate it.

#### To Vote on \$250,000 Hospital Bonds.

Sanford, Fla.—An election will be held in this city on January 18 on a bond issue of \$250,000 toward the erection and maintenance of a modern municipal hospital. In a bond issue voted last spring there was an item of \$100,000 included for a hospital, and this amount is now available. It is estimated that the proposed hospital will cost \$300,000 for construction and \$50,000 for equipment.

#### \$500,000 Addition for Birmingham Postoffice.

Birmingham, Ala.—General contract has been awarded by the Treasury Department, Washington, James A. Wetmore, acting supervising architect, to Devault & Deitrich, Canton, Ohio, for the erection of an additional story to the postoffice and courthouse building here, and for mechanical equipment and alterations. The entire work will cost about \$500,000.

#### \$1,500,000 Office Building Under Construction in Jacksonville.

Construction is in progress on the new 17-story Lynch office building at Jacksonville, Fla.; it is being erected at a cost of approximately \$1,500,000 by the Florida Realty and Securities Company of that city, a subsidiary of the S. A. Lynch Enterprises of Atlanta. The structure is 100 by 100 feet, of reinforced concrete and steel, faced with stone, brick and terra cotta. It is fireproof throughout and is equipped



NEW 17-STORY LYNCH BUILDING, JACKSONVILLE.

with four elevators. There will be 17 stores on the street floor; all offices will have an outside exposure. Pringle & Smith of Atlanta are the architects and H. Robin Burroughs of New York is the engineer. The general contract is being handled by the Realty Construction Company of Jacksonville.

Sub-contractors on the building include the following: Ball Hardware Company, Sanford, Fla., hardware; Price-Evans Foundry Company, Chattanooga, steel and cast iron; D. A. Ebinger Sanitary Manufacturing Company, Columbus, Ohio, metal toilet partitions; O'Pry Plumbing and Heating Company, Macon, Ga., plumbing and heating; Warren-Huckins Company, millwork and trim; Keay & Co., painting; A. D. Tourangeau, hauling; C. F. Hoffman, Inc., plastering; J. G. Edwards, excavation; C. E. Hillyer, foundation, all of Jacksonville; F. J. Cooledge & Sons, plate glass; Patent Scaffolding Company, scaffolds; Atlanta Terra Cotta Company, terra cotta; Otis Elevator Company, elevators, all of Atlanta; Campbell Tile and Mantel Company, Greenville, S. C., marble work; Anchor Fireproofing Company, fireproofing and partitions; Crittal Casement Window Company, steel



casement windows, both of Detroit; Cutler Mail Chute Company, Rochester, N. Y., mail chutes; Levering & Garrigues, steel erection; Republic Fireproofing Company, tile blocks, channels, etc., both of New York; Interstate Roofing and Foundry Company, Anniston, Ala., roofing; Ingalls Stone Company, Bedford, Ind., limestone, and H. P. Foley Company, Miami, Fla., electrical installation.

### J. C. Penney Declares Florida Will Become Center of Nation's Agriculture.

"Florida, with its comparatively low-priced agricultural lands, is within 20 hours' ride of 75 per cent of the population of the country, while instead of having only a few months of the year to grow their crops, its farmers have the full year in which to make their farms productive," Mr. Penney is quoted by the Jacksonville Times-Union. Further his statement says:

"The small farm in Florida will bring the greatest measure of prosperity to the greatest number, but six things are necessary to be a successful farmer anywhere. They are intensity of cultivation, thoroughness in preparation of the soil, diversification of crops, industry on the part of the farmer, thrift and, most of all, pride in the profession of being a farmer.

"I would like to see agriculture on as high a plane in this country as it is in Europe. In England it is an honor to be a farmer. Here some seem to be ashamed of it. It must be that they don't get the joy out of tilling the soil. To me there is no thrill like that of seeing things grow, things you have tended with your own hands."

The trouble with our corn farmers in the North and cotton farmers in the South, he said, is that they are burdened with too much land, thinly cultivated, high-interest charges, short-growing seasons and small yields per acre. Mr. Penney owns a tract of 120,000 acres of farm land in Florida on which he is developing a co-operative farm community of small farms.

### Kentucky Leads in Natural Rock Asphalt Production.

M. G. Hornaday of Memphis, Tenn., advises the MANUFACTURERS RECORD that the development of natural rock asphalt in the South—mention of which was made in the publication by the MANUFACTURERS RECORD of a recent address by Prof. A. F. Greaves-Walker before the American Mining Congress at its annual meeting in Washington—is on a very large scale, and says:

"Dr. Greaves-Walker only mentions the asphalt deposits of Oklahoma, and his statement about their future development is unquestionably correct, but Oklahoma ranks about third in the production of asphalt, and even the development in Texas far outranks the Oklahoma operations, with Kentucky standing pre-eminently above all other States in the country in the production of natural asphalt.

"There has been invested in the mines of Kentucky in the production of natural rock asphalt approximately \$7,500,000, and shipments from these mines during 1925 amount to enough material to lay in streets and roads approximately 5,000,000 square yards of surfacing, and there was a decided increase in this production during 1926.

"Kentucky stands at the head of any other locality in the world in the production of natural rock asphalt."

### Texarkana to Vote on \$317,000 Bond Issue for City Hall.

Texarkana, Ark.—Under the terms of a recent Constitutional amendment, City Council of Texarkana has passed an ordinance calling for an election on February 23 on a bond issue of \$317,000, of which it is planned to use \$300,000 for the erection of a city hall to contain a large auditorium. At a previous election an improvement-district issue of \$250,000 was authorized for building a city hall, but the Supreme Court held this action unconstitutional.

### Review of Foreign Trade for 1926.

Further expansion of our export commerce, so conspicuous in the past, will continue in the near future, is the expectation of Dr. Julius Klein, director of the United States Bureau of Foreign and Domestic Commerce. And a recession in 1927 from the prosperity of 1926 would, it is believed, decidedly stimulate exports. The past five years have brought an increase in the "export sense" of American business; our manufacturers are better equipped than in former years, alike in contracts and in organization and in understanding of foreign markets, and any let-up of domestic demand would immediately stimulate vigorous export efforts.

Other factors also favor a continued expansion of our exports. Economic conditions in foreign countries are improving. At the same time that our customers thus become better able to buy, our manufacturers are steadily increasing their efficiency, with the result that in many products the highest-priced labor in the world is able to compete with the cheap labor of Europe.

An interesting feature of the export situation is the fact that while volume of exports has increased, money value of exports has declined slightly. The department declares that after careful calculation it is found that the fall in the price of cotton more than accounts for the decline in money value of exports, thus indicating a slight increase in money value, as well as in volume, of other exports.

While value of exports has dropped slightly, value of imports has increased with the result that the favorable balance of trade has fallen from \$947,000,000, the average for the preceding five years, to between \$300,000,000 and \$350,000,000. It is expected to be the smallest balance since 1910. This, it is explained, is due more to our demand for foreign luxuries as a result of our increased prosperity than to the slight decline in exports.

In other fields of international dealings very large figures were recorded. The new foreign investments during 1926, totaling more than \$1,000,000,000, were probably the largest in any one year since the war. Tourist travel also was unusually heavy. Yet receipts of interest and dividends on foreign investments was so large that instead of exporting gold we actually imported a balance of between \$80,000,000 and \$100,000,000.

### Extends Date of Bids on \$2,500,000 Hospital.

Jackson, Miss.—The date of receiving bids for the erection of a group of buildings here for the new \$2,500,000 Mississippi Insane Hospital has been extended from January 11 to January 18 by the State Hospital Removal, Improvement and Sale Commission, R. L. Brown, secretary. As previously announced, the proposed buildings will include an administration building, cottage for chronic cases, laundry and commissary. N. W. Overstreet of Jackson is the architect.

### Baltimore Line Establishes New Florida Service.

A new passenger service to West Palm Beach, Fla., has been inaugurated by the Baltimore and Carolina Steamship Company, whose passenger ships will call at the Florida port on the southern trip from Baltimore and again on the northern trip from Miami to Baltimore. Service will be maintained on a 10-day schedule.

### \$2,000,000 Office Building for Tulsa.

Tulsa, Okla.—Details have been arranged by Waite Phillips of this city for erection of a \$2,000,000 office building here with a height of from 20 to 30 stories. The structure will be 100 by 140 feet, of the pyramid or tower type.

## THE IRON AND STEEL SITUATION

### Holiday Dullness in Steel.

Pittsburgh, January 3—[Special.]—Last week was rather a dull one in the steel trade, just as was to be expected. In general line buying by jobbers and manufacturing consumers for prompt shipment there was perhaps more activity than usual at that time of year. If so, this would be accounted for by the hand-to-mouth buying so generally prevalent, leaving little or no opportunity for curtailment. In special buying, of freight cars and fabricated structural steel, the past fortnight has been quite inactive, doubtless on account of the holidays. Lately there has been quite a volume of freight-car inquiry out, with reports of more to come out, and there has been much structural-steel work more or less in sight. Actual car buying in the past fortnight has been small, and the fabricated structural-steel lettings reported in the two weeks ran scarcely more than one-third of the old rate. In both lines much more activity is to be expected this month.

Steel-mill operations reached a high point in October, the highest for several months, and declined in November and December, but they did not decline as much as has been commonly predicted. The November steel-ingot report showed an 80 per cent operation and December may now be estimated at about 75 per cent. January is likely to show an increase.

Prices of the principal finished steel products have been fully and rigidly maintained, with the usual exception of sheets, which recently dropped off \$2 a ton from the advanced asking prices announced late in September, while in the past week there has been still deeper shading. Hopes that the sheet market will come back early in the new year are reduced. There is certain to be more general line demand, as sheet shipments dropped to a very low rate in the latter part of December, but there is a fresh complication in the matter of automobile sheets. The automobile trade has had a rather sharp decline in operations in the past three months, and, while this month is virtually certain to show an improvement, this can occur without anything like a high rate being attained. For the sheet trade there is another factor, as several strip mills are being built to roll very wide strips for body material, and this material will eventually make sharp competition with sheets. It is several years ago that strips began to supplant sheets for fenders. If the sheet industry loses much automobile trade to the strip mills, there will be correspondingly more competition in common sheets.

The year 1926 may be reviewed briefly to suggest its augury for the new year. Steel-ingot production was in the neighborhood of 47,150,000 gross tons, indicating about 34,500,000 gross tons production of what is called statistically finished rolled steel, i. e., material weighed after its last hot rolling and shearing. This involves skelp rather than pipe, for instance, and wire rods rather than wire and nails. The actual merchantable products of the steel mills were nearer 34,000,000 gross tons.

The 1926 tonnage represented an increase of 7 per cent over that of 1925, but only 8 per cent over 1923, 15 per cent over 1920 and 55 per cent over 1912 and 1913, the two biggest pre-war years. These increases are very moderate, while there have been, since 1920, great increases in efficiency in the working up of steel. There has also been an increase in population. This means that the steel consumption of 1926 was effected with relatively little effort, and it becomes the easier for such a tonnage to be continued and improved upon. There may be decreases in some lines of steel consumption in 1927, yet an increase in the total. That was exactly the case in 1926, for some lines went back and other lines went forward by a greater amount. It will be remarkable if the

oil and gas fields consume as much tubular goods as in 1926, when their consumption took a large jump, and building may take somewhat less steel, and the automobile trade if it makes as many cars may not consume as much steel, as light cars are getting more into vogue. On the other hand, railroad consumption of steel promises to be heavier and general line consumption promises to continue increasing.

It has now become quite well established that there will be no general wage reduction in the Connellsville region, leading producers being determined to maintain the advance of November 1. This will relieve the uncertainties of the valley pig-iron market, and more buying is to be expected on the basis of coke costing the furnaces \$4 to \$4.25 per net ton at ovens.

### Greater Pig-Iron Output in 1926.

Birmingham, Ala., January 3—[Special.]—The holidays are out of the way and plans for resumption are being made. For three weeks the make of iron has been materially curtailed, but even so the output for the last month of the year showed up well and complete production records indicate that the 12 months had a greater tonnage than the previous year when 2,815,688 tons were produced. During the first six months of 1925 the pig-iron production amounted to 1,430,973 tons, while the same period of 1926 saw 1,442,882 tons. The last six months of 1925 showed production of 1,384,715 tons, while the last six months of 1926 went above 1,400,000 tons. Resumption at cast-iron pressure as well as soil pipe shops will be noted this week, especially in the departments where sand-cast pipe is produced. Stove manufacturers will also resume activity and in other circles there will be better operation. The radiator plant is back at work. There is no great amount of pig-iron on yards of consumers, but as long as there is little fluctuation in quotations there is hardly any hope for a change in the hand-to-mouth buying method. The new year started with a very small surplus stock on furnace yards, not sufficient to be pointed to with an idea of a weakened market. To hold to the demand and supply order of things, fires were banked in two furnaces a few weeks ago and the make held down so far as foundry iron was concerned.

Activity in steel circles is already gathering strength; there was an early resumption of operations after the Christmas holiday. The output of steel is greater than ever before, the full plant at Fairfield, eight 140-ton open-hearth furnaces, now being in operation. Unfilled tonnage report of this district appears to be large. The business booked in the rail mill and shops producing railroad accessories is of consequence. Plans are now being laid for continued development looking to even greater steel production. As in pig-iron, very little steel is being shipped from this district, the finished shape being offered on the open market. Southern stove foundries are finding a better market for their products in the north. Other industries are also marketing in other territories, a very large proportion of the pressure pipe made here going to the Middle West, the Northwest and the West.

Plans for development in steel circles for the new year include the completion of the two large blast furnaces at Fairfield, which are to have a daily capacity of 600 tons each of basic iron, and the 77 additional by-product coke ovens to the big works at Fairfield. The Tennessee Coal, Iron and Railroad Company will use the gas from the blast furnaces in an electric plant and for other purposes. Plans for rounding out several of the finishing plants in Ensley-Fairfield by the Tennessee Company, started on in December,



1925, will see before completion the expenditure of more than \$15,000,000. The announcement of plans for the present year will include work on the plans unfinished, besides other work.

Coal mining has again taken on activity. The market is not so good as a few weeks ago, but sufficient to warrant active operation of mines. The coke market is also showing fairly good conditions, with prospects of necessity for active production right along.

The scrap iron and steel market is very active, quotations, however, continuing low. Much old material is moving from dealers to consumers.

Quotations on pig-iron and iron and steel scrap follow:

PIG-IRON.	
No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$20.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$20.50; iron of 2.75 to 3.25 per cent silicon, \$21.00; iron of 3.25 to 3.75 per cent silicon, \$21.50; iron of 3.75 to 4.25 per cent silicon, \$22.00; charcoal iron, f. o. b. furnaces, \$29.00 to \$30.00.	
OLD MATERIAL.	
Old steel axles .....	\$16.00 to \$17.00
Old iron axles .....	16.00 to 17.00
Old steel rails .....	12.50 to 13.50
Heavy melting steel .....	13.00 to 13.50
No. 1 cast .....	16.00 to 17.00
Stove plate .....	14.00 to 15.00
No. 1 railroad wrought .....	11.00 to 12.00
Old car wheels .....	15.00 to 16.00
Old tramcar wheels .....	16.00 to 17.00
Machine shop turnings .....	8.00 to 8.50
Cast-iron borings .....	8.00 to 8.50
Cast-iron borings (chem.) .....	15.50 to 16.50

### Contracts for Power Plant Improvements.

Henry A. Mentz, Hammond, La., consulting engineer for improvements to the power plant at Franklin, La., advises the MANUFACTURERS RECORD that contract for a 400-horsepower air-injection Diesel engine has been awarded to the Busch-Sulzer Diesel Engine Company, St. Louis, and for electrical equipment to the General Electric Company, New Orleans. Contract for concrete foundations, amounting to approximately 130 yards, was awarded to C. J. Montgomery, Kaplan, La., while extensions to the plant building will be handled locally.

### Huge Oil Traffic Out of Texas Panhandle Field.

Slaton, Texas, December 31—[Special.]—Transportation of oil in tank cars from the Panhandle field over the lines of the Atchison, Topeka and Santa Fe Railway has become such an enormous business that other traffic is moved with the greatest difficulty. This is particularly true of southbound oil movement destined to the refineries at Gulf coast points. In one day recently 514 loaded tank cars of oil passed through Slaton southbound. More passing tracks are needed to accommodate the trains that are bound northward, and these will be built as soon as possible, it is stated. Never in the history of the Santa Fe was a movement of this magnitude handled over its lines. It is expected that it will continue indefinitely, although three pipe lines are being built into the Panhandle field.

### Capitals and Capitols of West Virginia.

Governor Howard M. Gore of West Virginia contributes an interesting and informative article to the January issue of the Chesapeake and Ohio and Hocking Valley Employees' Magazine on "Capitals and Capitols of West Virginia." Since June 20, 1863, when West Virginia became a State, its affairs have been conducted in five different capitols, two of these having been in Wheeling and three in Charleston. The permanent location of the Capitol at Charleston finally was determined upon after the burning of the old Capitol in 1921, and now there is in course of erection in that city a very imposing and massive building which will house all the activities of the Commonwealth. A fine picture of the new Capitol is on the cover page.

## RAILROADS

### GREAT RAILROAD BUSINESS OF 1926. Records Broken Both in Car Loadings and in Traffic Movement.

The American Railway Association reports that loading of revenue freight on the railroads during 1926 will amount to 53,260,000 cars, which is an average of more than 1,000,000 cars per week for the entire year. Reports for the first 50 weeks of 1926 show an increase of 4 per cent over 1925, or an increase of over 9% per cent over the same period of 1924. The largest loadings in any one week was during the week ended October 30, when 1,216,432 cars were loaded, this being the greatest weekly loading total ever known. This was nearly 92,000 cars ahead of the best previous weekly record.

Not only did the number of cars loaded with revenue freight in 1926 exceed all previous records, but also the volume of freight traffic as measured in net ton-miles, which is the number of tons of freight multiplied by the distance carried. Reports show that the volume of freight traffic for the first 10 months in 1926 amounted to 405,131,386,000 net ton-miles, which exceeded by 19,107,698,000 net ton-miles, or 4.9 per cent, the best previous record, which was that for the corresponding period in 1923. On the basis of the showing for the first 10 months, it is estimated that the total for the year will amount to 488,000,000,000 net ton-miles, an increase of 32,000,000,000, or 7 per cent, over the best previous year, which was in 1923.

One of the outstanding reasons for the efficient and dependable service which the railroads rendered in 1926 was the large expenditures for capital improvements made in recent years to provide more adequate transportation and to increase economy and efficiency. Since 1920 capital expenditures have amounted to nearly \$5,200,000,000, of which \$875,000,000 was spent in 1926. In the latter year, however, expenditures authorized amounted to \$1,325,000,000, of which authorizations approximating \$450,000,000 will be carried over to 1927 for completion.

The net operating income of the Class 1 railroads in 1926 was approximately \$1,250,000,000, or a return of 5.23 per cent on their property investment. This estimate is based on complete reports for the first 10 months, which showed a net railway operating income of \$1,035,475,630, which was at the annual rate of return of 5.25 per cent on their property investment and an estimate made by the Bureau of Railway Economics as to earnings in November and December.

### President Kurn of the Frisco System Reports 1926 As a Great Year.

St. Louis, Mo.—James M. Kurn, president of the St. Louis-San Francisco Railway, or "Frisco" system, says: "The largest property-improvement program ever inaugurated by the Frisco has just been completed in the expenditure of \$21,000,000 for new equipment and improvements. The budget was divided equally between the two items, and 5700 new freight cars and 25 new locomotives have been purchased in 1926, placing the Frisco on a parity with any railroad west of the Mississippi River as to equipment.

"A record in the establishing of additional industries on the system was made when switch tracks were constructed for 430 new industries of all kinds during the year.

"While complete figures from our agricultural development department are not yet available, we are confident that they

will show great increases in the shipment of perishable products, and in addition the dairy and poultry industry in the Ozark territory is making tremendous strides, with resultant increases in car loadings of those products.

"We are planning still further improvements to Frisco Lines in 1927, chief among them the construction of a new railway through Mississippi and Alabama, which will connect our recently acquired 'Pensacola Line' and give the Frisco its long desired outlet to tidewater at Pensacola, Fla."

### Freight Loadings Keep High.

Loading of revenue freight for the week ended on December 18 totaled 950,575 cars, the Car Service Division of the American Railway Association announces. This was a decrease of 19,163 cars under the corresponding week last year, but 49,921 cars over the same week in 1924. Due to seasonal decline, the total for the week of December 18 was a decrease of 48,140 cars under the previous week this year, but coal loading for the week totaled 230,753 cars, an increase of 43,482 cars above the same week last year and 39,906 cars above the corresponding week in 1924.

Since January 1 last there have been 52,537,054 cars loaded with revenue freight, which compares with a little more than 50,500,000 for the same period of 1925 and with over 47,800,000 for the corresponding period of 1924.

### A Short-Line Railroad Plan Revived.

The idea of building a railroad through the Northern Neck section of Virginia has been revived, and at a recent meeting held at Warsaw, Va., which was presided over by H. O. Howeth, an executive committee was appointed to take up the proposition. The committee is as follows: Thomas Lomax Hunter of King George county, Blake T. Newton of Westmoreland county, O. W. Douglas of Northumberland county, Robert O. Norris of Lancaster county, W. Y. Morgan of Richmond county. Dr. F. W. Lewis and H. O. Howeth, both of Morattico, were appointed members at large. It seems to be the idea of the promoters to connect the line with either the Richmond, Fredericksburg and Potomac Railway or the Chesapeake and Ohio Railway.

### New Equipment.

Western Maryland Railway has ordered 20 heavy freight locomotives from the Baldwin Locomotive Works at a total cost of \$1,670,000, this equipment to be delivered early.

Rock Island Lines have ordered 25 Mikado type and 10 Mountain type locomotives from the American Locomotive Company.

Norfolk and Western Railway has ordered 3 dining cars from the Pullman Car and Manufacturing Company.

Louisville, Henderson and St. Louis Railroad has ordered 15 stock cars of 40 tons capacity from the American Car and Foundry Company.

### Cross-Florida Sleeping-Car Service.

Venice, Fla.—More and faster transportation to and from Venice is a necessity recognized by the Seaboard Air Line Railway in the announcement by H. G. Gordine, district passenger agent at Bradenton, and W. H. Morriss, city passenger agent at Sarasota, that a 12-section drawing-room sleeping-car service will be inaugurated between this city and Miami, beginning January 11. The new service not only materially shortens the running time between Venice and Miami, but it enables persons wishing to transact business in Miami to make the round trip in 48 hours, leaving the better part of a day for their negotiations in the city.

## TEXTILE

### Textile Men of South Seeking a Way Out of Their Difficulties.

George Sloan, secretary of the Cotton Textile Institute, New York city, recently made a tour of the Southern textile territory, from which he returned with most encouraging reports. Manufacturers, keenly alive to the necessity for expanding their markets, are devising new uses for cotton goods. One example of this is the cotton rugs which, having come successfully through several years of experimentation, are now finding a market outlet, with prospects of a large increase in their use. Another use to which cotton has long been put, but which is evidently susceptible of great development, is that of awnings, the possibilities in this field being indicated by the fact that more awnings are used in Massachusetts than in Georgia. Another line along which the thoughts of manufacturers are working is that of influencing the style centers, notably New York and Paris, to a more lively appreciation of the advantages of cotton dress fabrics. Considerable thought also is going into plans for persuading business people to decorate their offices and showrooms with cotton draperies, into plans for furthering the wider use of pneumatic tires with their fabric reinforcing, for plans for substituting cotton for other fabrics in bagging such as that in which fertilizer, cement, grain, seed, feed, salt, sugar, starch and the like are packed and with which cotton bales are covered. Keen interest was shown throughout in the recently formed Cotton Textile Institute, and much confidence is felt in its ability greatly to help the situation.

### Otis Company Defers Action on Removal to South.

At a joint meeting of a special stockholders' committee and the board of directors of the Otis Company of Boston, Mass., action on a recommendation to remove the Otis industries to Alabama was postponed, according to a letter to the MANUFACTURERS RECORD from Henry G. Nichols, treasurer.

A statement issued to the press announces that continued operation of all the company's plants was recommended. The committee felt that substantial savings could be made through employe co-operation and tax reductions, and that with such savings prospects for the immediate future were sufficiently bright to warrant postponing action.

It was decided to recall the adjourned stockholders' meeting at an early date for the purpose of acting on the original plan as submitted to stockholders, to be carried out when and if, in the judgment of the board, it should become advisable in the interests of the company. It is understood that the company will endeavor to operate all its mills, giving effect to savings suggested by the committee.

### \$200,000 Addition for Net and Twine Plant.

Press reports state that the American Net and Twine Company of Blue Mountain, Ala., will begin the construction on March 27 of a \$200,000 addition to its plant at Blue Mountain, plans for which have been formulated by Robert Barbour of New York, president, and Col. H. F. Williamson, vice-president. The company advises the MANUFACTURERS RECORD that all details have been arranged and that all equipment has been provided for.

Alex. Davidson of Amarillo, Texas, is reported to erect a \$2,000,000 hotel at Amarillo, to be operated by the Baker interests of San Antonio and other Texas cities.

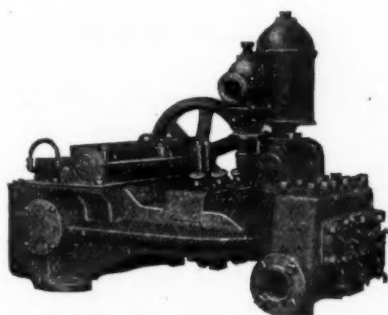


## MECHANICAL

### Improved Heavy-Duty Force Pump.

The "Giant" heavy-duty force pump, illustrated herewith, will be of interest to contractors, road builders and others requiring pumps in the course of their operations. It was recently perfected by the Domestic Engine and Pump Company of Shippensburg, Pa.

This new pump is a large-capacity, high-pressure, three-cylinder, self-oiling, single-acting plunger pump. The packing



VIEW OF HEAVY-DUTY PUMP.

is held stationary by outside adjusting packing glands. These glands are equipped with compression grease cups so the packing can be kept properly lubricated.

Special features are automatic force feed oiling of all connecting rod and drive shaft bearings, steel gears, machine

cut and running in oil, Hyatt roller bearings on high-speed drive shaft, closed crankcase to keep out dirt and retain oil.

The large-diameter steel, three-throw crankshaft is finished by grinding all bearing surfaces. Oil is forced through a drilled hole in the shaft direct to the connecting-rod bearings.

Valves and valve seats are bronze. Valves have 45 degrees angle seating face and are practically self-grinding. The valve caps are equipped with adjustable stops to regulate the lift of valves.

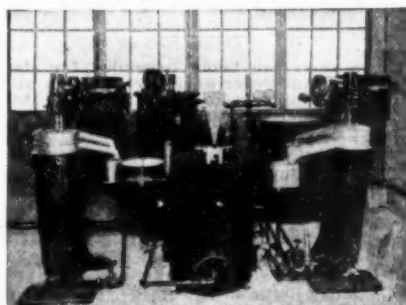
Air chamber, water-relief valve, pressure gauge and flanged unions for both suction and discharge connections are furnished as regular equipment.

This pump is regularly furnished with a 35-horsepower, 4-cylinder, industrial-type gasoline engine, with friction clutch and mounted on a steel wheel, spring-type trailer. The maximum working pressure is 600 pounds.

### Circuit-Breaker Oil-Reclaiming Process.

At a cost of approximately a cent and a half a gallon, the Sharples reclaiming process purifies contaminated circuit-breaker oil and maintains the oil in condition to assure

the safe operation of the oil circuit-breakers, thus protecting the feeder system, according to the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa. This process may be used to advantage on circuit-breakers, wherever installed, particularly in central sta-



RECLAIMING APPARATUS.

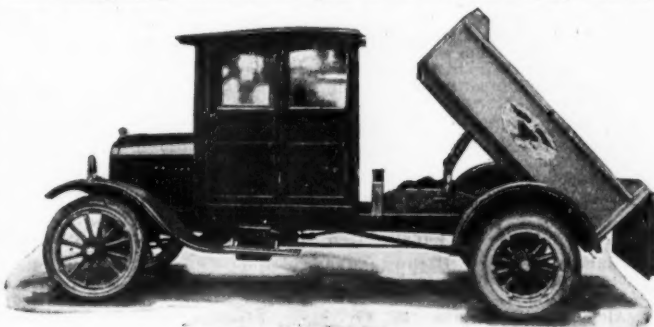
tions and industrial plants, operating their own sub-stations.

The operation of this apparatus is simple and requires the services of only one man. The contaminated oil is pumped from the supply source at the rate of 150 gallons per hour, through four 6000-watt heaters to a 50-gallon

mixing tank, where it is thoroughly mixed with the first reagent, with the aid of a motor-driven agitator. The resulting emulsion is fed into a super-centrifuge. The separator discharges the waste water containing some of the impurities, the solid impurities remaining in the bowl of the machine. The mixture is then treated with a second reagent in the second mixing tank and sent to a second super-centrifuge, and from there the purified oil is pumped to storage. This process may be intermittent or continuous according to the requirements of the station.

### Power Hoist Dump Truck.

An inexpensive power hoist dump-truck outfit, combining the Ford one-ton truck with a power dump body plus Warford transmission, has been put on the market by the Eagle Wagon Works of Auburn, N. Y. It is stated that this gives to users two-ton truck performance in hauling power and also dumping performance equal to a two-ton truck, this by



TRUCK WITH BODY IN DUMPING POSITION.

means of the Eagle mechanical power dump. There is also an auxiliary power take-off for pumping water, pulley work, etc. The accompanying illustration shows one of the new machines complete as described with closed cab.

Of this power dump body it is stated that it has tremendous power through mechanical gear reduction and that it takes less than one-quarter horsepower from the motor. Furthermore, it is foolproof, and if the automatic stop should not function no harm can be done. It operates smoothly and rapidly, dumping loads in less than 14 seconds, and it will operate no matter whether the truck is standing still or running on the road. Besides, the dump can be stopped or else speeded up at any point of the dump. A lever in the cab controls the dump, which can be reversed through the reverse pedal of the Ford chassis.

This power hoist is used with the company's regular steel body of either 1 yard, 1 1/4 yards or 2 yards capacity.

### Gummed Products Plant for Richmond.

Richmond, Va.—The business and all equipment of the Peters Company, Inc., of Brooklyn, N. Y., manufacturers of gummed products, has been purchased by the Wortendyke Manufacturing Company of this city, which plans to establish a gummed products plant here. The Wortendyke Company already operates three manufacturing departments for the production of grocery bags and sacks, twines and other twisted paper products, and toilet paper and towels. It will install its gummed products equipment in the Kanawha warehouse, adjoining the Wortendyke factory, and plans are now being arranged to transfer stock and machines from Brooklyn to Richmond. Principal products of the new plant will include gummed sealing tape, plain and printed, made from both cloth and paper, while gummed label paper and other such specialties will be produced as fast as a market is developed.

# CONSTRUCTION DEPARTMENT

## EXPLANATORY

Additional information is published about all enterprises mentioned in this department as soon as such data can be obtained.

An asterisk (\*) following an item indicates that the enterprise has been reported in a preceding issue.

## DAILY BULLETIN

The Daily Bulletin is published every business day to enable its subscribers to follow up promptly the industrial, commercial, railroad, financial, building and general business development of the South and Southwest. To machinery manufacturers and dealers, contractors, engineers, and others who require daily information of every new enterprise organized and details about important additions to enterprises already established, the Daily Bulletin is invaluable. Subscription price, \$3.00 a year.

### Airplane Plants, Stations, Etc.

Okla., Oklahoma City—Chamber of Commerce plans to float a \$10,000 bond issue for improving aviation field to bring it up to Government standards. See Financial News—Bond Issues Proposed.

Tex., San Antonio—Dusting Planes—Commerce Airway Corp., R. L. Compton, Mgr., 436 Bedell Bldg., advises: "We plan to start manufacturing planes latter part of coming year, but at present we plan to buy our equipment for dusting of cotton and other crops."\*

W. Va., Moundsville—Moundsville Airplane Corp., capital \$50,000, chartered; Roy C. Loudin, Wm. M. Boyd.

### Bridges, Culverts and Viaducts

#### Proposed Construction

Alabama—State Highway Comm., Montgomery, plans building 4 bridges. See Roads, Streets, Paving.

Ala., Carrollton—Wm. H. Armbricht, First National Bank Bldg., Mobile, and associates plan concrete and steel bridge, movable span, across Tombigbee River, between Aliceville and Cochrane, Pickens County.

Florida—State Road Dept. receives bids to build 4 bridges. See Roads, Streets, Paving.

Fla., Sanford—Seminole County plans building 6 bridges and 12 concrete culverts. See Roads, Streets, Paving.

Ga., Augusta—States of Georgia and South Carolina will build bridge across Savannah River at Furery's Ferry about 13 mi. from Augusta, opposite McCormick County, S. C., cost \$250,000; each State to pay half.\*

La., New Orleans—City plans bridge across Bayou St. John Esplanade Ave., Dumaine and other streets; also boulevard paralleling upper side of Bayou; Walter Parker, Gen. Chmn. Comm.; Moise Goldstein, Const. Archt.

Mo., St. Louis—Board of Public Works, Pres. Kinsey, and St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, plan \$485,000 viaduct over St. Louis-San Francisco tracks and River Des Peres at Arsenal St.; viaduct with approaches 1750 ft. long, from Jamison Ave. to Ellendale Ave.; four 182-ft. steel spans, concrete deck paved with asphalt; plans boulevard from McCausland Ave. under Missouri Pacific tracks along Ellendale Ave. past western end of new viaduct; L. R. Brown, Ch. Engr. of Bridges and Buildings.

N. C., Greensboro—City, P. C. Painter, Mgr., receives bids about Feb. 15 for 11 underpasses on Southern Rwy., steel girder decks and concrete abutments, paved approaches and storm drainage system; estimated cost \$1,000,000; Felheimer & Wagner, Engrs., 155 E. 42nd St., New York.

Oklahoma—State Highway Commission, Oklahoma City, received low bids for nine bridges. See Roads, Streets and Paving—Proposed Construction.\*

Okla., Stillwater—State Highway Comm. received low bids for 3 bridges. See Roads, Streets, Paving.

Okla., Tulsa—City, C. Schultz, City Engr., plans steel and reinforced concrete underpass. See Financial News—Bond Issues Proposed.

South Carolina—State Highway Dept. will build 10 bridges. See Roads, Streets, Paving.

Tex., Corpus Christi—Padre Island Causeway Co., Col. Sam Robertson, Pres., plans 18,300-ft. Don Patricio causeway, connecting mainland at Flour Bluff with Padre Island, estimated cost \$35,000; George R. Clark, Treas., State National Bank, Corpus Christi.\*

Tex., Pecos—State Highway Comm., Eugene T. Smith, Chmn., Austin, received low bid from Armstrong & Armstrong, Houston Bldg., San Antonio, at \$6903 for two 22-ft. concrete slabs, two abutments and 18-ft. bents. State Highway No. 1, Reeves County, about 1 mi. east of Toyah.

Tex., Sanderson—Southern Pacific Ry. Co., H. M. Lull, Ch. Engr., Houston, receives bids after Jan. 1 for reinforced concrete bridge over Sanderson Creek, near Sanderson; cost \$125,000.

Virginia—State Highway Comm., H. G. Shirley, Richmond, received low bids for 7 bridges. See Roads, Streets and Paving—Proposed Construction.

W. Va., Huntington—City, Mayor Neal, receives bids soon for Guyan River Bridge at mouth of Robey Hollow; A. B. Maupin, City Engr.

#### Contracts Awarded.

Fla., Jacksonville—Duval County Commrs., Frank Brown, Clk., let contract to Dean Construction Co., Inc., Washington, N. C., at \$48,059 to complete bridge over Pablo Creek on Atlantic Blvd.

La., Homer—Vermilion Parish Police Jury let contract to Vincennes Bridge Co., Vincennes, Ind., for concrete bridge across Bailey Creek 1 mi. from Athens, on Athens and Arcadia Highway.

### Clayworking Plants

S. C., Laurens—Kendrick Brick Co., capital \$12,000, incorporated; M. N. Kendrick, George E. Brooks.

### Coal Mines and Coke Ovens

La., New Orleans—Consumers Coal Co., Inc., capital \$20,000, chartered; Jos. Darsam, 2001 Poydras St.

Mo., Fulton—Trigg-Crowson Coal Co. incorporated; Thos. J. Trigg, Claude Crowson.

Tex., Fort Worth—Cobden Fuel Co., First Natl. Bank Bldg., capital \$10,000, incorporated; R. J. Cobden.

W. Va., Fairmont—Monongahela Fuel Co., incorporated; Watson B. Williams, Louis C. Tetard, 90 West St., both New York City.

W. Va., Huntington—Lewis-Hale Coal Co., capital \$100,000, incorporated; J. H. Lewis, First National Bank Bldg.

W. Va., Wheeling—Frank Costanzo, Pres. of the Costanzo Coal Mining Co., Main St., acquired 270 acres coal land in Ohio County; will probably develop with present holdings.

### Concrete and Cement Plants

Tex., Beaumont—The Texas-Neches Tile Co., 670 Sabine Pass Ave., will establish business of tile, marble, terrazzo contracting and manufacturing of pottery, flower urns, vases, etc.; wants prices and samples and freight rates on everything entering into the above line of work; also desire information on machines to hold fancy shapes of carbundum stones to be used in getting out bases, coping, nosing, etc.; also small sandblast outfits of sandblast to put fine finish on cement objects. [See Machinery Wanted—Sand Blast Equipment; Grinding (Carbundum) Machines; Ornamental Concrete Products Forms.]

### Cotton Compresses and Gins

Miss., Flora—Jones-Wilson Gin and Milling Co., capital \$25,000, incorporated; Hal J. Jones, Flora; J. E. Wilson, 420 N. State St., Jackson; erect cotton gin.

Tex., Ira—Ira Gin Co., incorporated; E. R. Allen, C. N. Smithers.

### Cottonseed-Oil Mills

La., Jonesboro—A. J. Simonton, the Jackson Parish Bank, owns and operates 3 units of four 80-saw gins, considering operation of small cottonseed oil mill and fertilizer plant. (See Machinery Wanted—Cottonseed Oil Mill Fertilizer Factory.)

Okla., Hobart—Producers' Cotton Oil Co., George E. Neal, reported to construct cold press cotton seed oil mill; capacity 30 to 40 tons daily.\*

Tex., San Antonio—San Antonio Oil Works, 411 Cherry St., reported to construct cotton-oil mill at Union Stock Yards; 2 story, reinforced concrete, 42x130 ft.; Richard V. Stratton, Archt., Travis Bldg.

### Drainage, Dredging and Irrigation

Fla., Ft. Lauderdale—City Comm. receives bids from Hollywood Dredging & Const. Co., Hollywood Beach, Hollywood, at \$62,925 for dredging New River channel from mouth of inlet to point opposite Bay Mabel.\*

Fla., West Palm Beach—Riddle Co., Engr., 421 S. Olive St., reported in charge of developing 1280 acre farm in Everglades; Dr. F. G. Swartz and associates, head of syndicate; plans include construction of co-operative market, packing house, canning factory, etc.

La., Alexandria—Commrs. of Red River, Atchafalaya and Bayou Boeuf Levee Dist., 515 Commercial Bank Bldg., will construct new levee work on the Sandusky levee in Rapides Parish, approximate contents 46,000 cu. yds.; receives bids Jan. 5; plans with State Engrs., 213 New Orleans Court Bldg., New Orleans.\*

La., Shreveport—Commrs. of Caddo Levee Dist., 126 Milan St., will construct new levee and bank protection work on the Cash Point Bend on the right bank of Red River in Caddo Parish, approximate length 4800 ft., contents 68,000 cu. yds., protecting about 2000 ft. river bank; receive bids Jan. 19.\*

Miss., Holly Springs—Commrs. of Red Banks Creek Drainage Dist. of Marshall and DeSoto Counties will construct drainage system; 270,000 cu. yds. earth excavation, clear 40 acres land; receive bids Jan. 14; Smith & Smith, Attyrs., Holly Springs.

Tex., Brownsville—Cameron County Water Improvement No. 6 has \$600,000 available for completion of drainage work. See Financial News—Bond Issues Proposed.\*

### Electric Light and Power

Large sums are being expended for electric light and power work in connection with Land Development operations. Details will be found under that classification.

Ala., Birmingham—Alabama Power Co., reported to improve Upper Tallassee dam on Tallapoosa River into major development; increase height from 36 to 57 ft., capacity from 8500 to an initial installed capacity 50,000 h.p.; later may install third unit 25,000 h.p.

Ala., Greenville—City reported plans installing electric light plant. Address The Mayor.

Fla., Lakeland—See Miscellaneous Construction.

Fla., Pensacola—Gulf Electric Co., Birmingham, Ala., reported planning extensive improvements in Northwest Florida; plans include improvements to lines in Graverville, Bonifay, Chipley, Palafox, etc.; will probably acquire additional utilities in Northwest Florida.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



Fla., Tarpon Springs—General Engineering & Management Corp., St. Petersburg, and 165 Broadway, New York, for Pinellas County Power Co. advises regarding erection of substation at Tarpon Springs and general work throughout Florida: "Firms contributing to this work are General Electric Co., Schneecady, N. Y., electrical equipment; Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., electrical equipment; Locke Insulator Corp., Baltimore, insulators; Memco Engineering Co., Long Island City, New York, bus supports and switches; J. Paul Jones, St. Petersburg, building contractor; Truscon Steel Co., Youngstown, O., substation steel; construction work has been started on foundations for substation, providing for connecting transmission lines from Georgia, Central Florida, Tampa and St. Petersburg, and will house necessary equipment; approximately \$200,000 will be spent in Tarpon Springs within next 3 months, including warehouse and garage, switch building; other work includes hydroelectric plant 8 miles north of Hish Springs on Santa Fe River, cost \$2,500,000."

Ga., Homerville—Ware County Light and Power Co., Waycross, reported has site for substation; C. H. Dickerson has contract for poles for street lighting.

La., Franklin—Busch-Sulzer Diesel Engine Co., 3300 S. Second St., St. Louis, Mo., has contract for 400 h. p. air-injection Diesel engine for power plant improvements; the General Electric Co., Union Indemnity Bldg., New Orleans, has contract for all electrical equipment; extension to building will be handled locally; C. J. Montgomery, Gen. Contr., Kaplan, has contract for all concrete foundations, amounting to about 130 yds.; Henry A. Mentz, Const. Engr., Citizens National Bank Bldg., Hammond.\*

La., New Orleans—New Orleans Public Service, Inc., reported let contract to Phoenix Utility Co., New York City, local offices 1804 Tchoupitoulas St., for 5-story reinforced concrete and brick boiler house on Richmond St.

Md., Vienna—Eastern Shore Gas and Electric Co., general office Salisbury, under control of General Engineering and Management Corp., 141 Broadway, New York, reported to establish power plant on Nanticoke River. Company wires: "We will build 16,000 h.p. steam turbine electric power station at Vienna; new transmission lines will be built to Cambridge and to Salisbury; plant and transmission lines will cost about a \$1,500,000; construction work to start about March 1 of next year." Directors of National Service Corp. authorized new central station for company, also has \$500,000 appropriation for transmission lines for purpose of corporate structure the Delmarva Power Co. has been organized to construct generating station; engineers of General Engineering & Management Corp. are designing the station to be constructed in units, with initial installation of two 6000 kw. Westinghouse 2-stage bleeding turbines of 3600 r. p. m., 6600 volts, 3 phase, 60 cycle, to be operated at 300 lbs. pressure at throttle; turbines will be of same make as now in use at plants at Whippany, N. J., and Inglis, Fla.; three 350-lb. boilers, with total heating surface of 7700 sq. ft. each, furnaces provided with underfed, multiple retort stokers; plans include unloading facilities; initial storage space for 20,000 tons of coal, later to be increased to 50,000; construct 1600-ft. span across Nanticoke River on 200-ft. towers to connect plant to general system.\*

Miss., Louisville—Mississippi Power Co., Gulfport, reported to construct additional unit to present high voltage transmission system from Louisville to Philadelphia, 25 miles long, 44,000 volts, construct substation.

Miss., Pass Christian—Board of Aldermen reported plan installing white way system on Front St. and on Second St.

Mo., Cape Girardeau—Missouri Utilities Co. will install 38 lamps in outlying district.\*

Mo., Lamar—City Council voted to submit sale of municipal light and water plant to vote by people.

Mo., Poplar Bluff—Black River Hydro-Electric Co., offices in Poplar Bluff and St. Louis, reported applied for 50 year franchise and municipal electric plant.

Oklahoma—Chickasha Gas and Electric Co., Chickasha, reported received 25 year franchise in Gracemont, Binger, Lookaba; construct high voltage line Verden to Anadarko, etc.

S. C., Columbia—Blue Ridge Power Co., Spartanburg, a subsidiary of General Gas & Electric Corp., reported merged with Broad River Power Corp., Columbia, and will be operated as Broad River Power Co.; holdings of Blue Ridge Power Co. and Manufacturers Power Co., recently acquired by General Gas & Electric Corp.; company will also consolidate with Melrose Power & Mfg. Co., Tryon, N. C.

Tex., Clifton—City considering sale of light plant, subject to vote of people. Address The Mayor.

Tex., Dallas—Dallas Power & Light Co. applied for franchise for light and power lines in University Park; will probably install ornamental street lighting system through St. Andrew's Place.

Tex., Dallas—Texas Power & Light Co., C. E. Calder, Pres., advises that 35 electric properties have been added to company's system through purchase of electric properties of Texas Public Utilities Co. and of Mineral Wells Electric Co.; capital stock of company increased \$16,500,000 to \$26,000,000; company now owns and operates over 2100 miles of high-tension transmission lines; properties purchased are located in Brenham, Lampasas, Copperas Cove, Killeen, Llano, Lometa, San Saba, Bastrop, Lockhart, Mineral Wells.\*

Tex., Fort Worth—City entered into contract with Fort Worth Power and Light Co. for period of 10 years, with rate adjustment clause at end of 5 years.

Va., Clifton Station—C. B. Doak contemplates installing high-speed generator and water wheel; has dam built but cannot get power necessary for vertical remote control outfit; wants 60 h.p. and 100 h.p. A. C. generators, first with friction clutch to be connected to a 60 h.p. Fairbanks-Morse oil engine, and second for water wheel, over-shot type. (See Machinery Wanted—Generator, Electric.)

Va., Williamsburg—College of William and Mary reported to expend \$9000 for new lighting system on college campus; W. H. Perry Electric Co., 340 S. Washington Ave., Newport News, Va., has contract.

### Fertilizer Plants

Fla., Pensacola—Chemical Fertilizer Co. incorporated; B. Huff, G. L. Brain.

### Flour, Feed and Meal Mills

Mo., Carthage—Morrow-Kidder Milling Co., capital \$120,000, incorporated; E. W. Kidder, 322 Wiggins St.

### Foundry and Machine Plants

Ky., Lexington—Locomotive Equipment—F. H. Cravens Developing Co., capital \$50,000, incorporated; F. S. Cravens, A. J. Stamper, both Olive Hill.

Mo., Kansas City—Screws—Turner-Warner Screw Co., B. G. Warner, Gen. Mgr., increased capital, \$10,000 to \$50,000.

S. C., Spartanburg—B. T. Earle, 248 Pine St., will erect foundry building on St. John St.; 100x25 ft. brick; construction by day labor; materials all purchased.

Tenn., Nashville—Steel Ranges—Allen Manufacturing Co., 300 Tenth Ave. N., increased capital, \$75,000 to \$500,000.\*

Tex., Fort Worth—Oil Well Supplies—American Manufacturing Co., Fred Barney, V. Pres., reported started work on \$30,000 building on 30 acre site located near Hodge Station; manufacture oil well supplies; plans to open plant by March 1.

Tex., Sherman—Mill and Gin Supplies—Hardwicke-Etter Co., J. F. Etter, Pres., will erect \$20,000 brick building to be used as assembly plant and addition to factory, 100x146 ft.; also build 250 ft. of lumber sheds.

### Gas and Oil Enterprises

Ark., Fordyce—Arkansas Natural Gas Co., Pine Bluff, reported has franchise; construct pipe lines.

Fla., Bartow—City may grant franchise to Gas Hydrocarbon Recovery Corp.; will vote at election Jan. 7; G. J. McNamee, City Auditor.\*

Fla., Tallahassee—City, B. H. Bridges, Clk., voted \$36,000 bonds for extending gas plant.\*

Ky., Louisville—Hughes Petroleum Co. incorporated; Wheeler Hughes, Fred Kleffer.

La., Shreveport—Edmund Seymour & Co., Inc., 44 Wall St., New York, are offering \$1,200,000 6 1/4% sinking fund gold bonds Northwest Louisiana Gas Co., Inc.; proceeds to be used for retirement of first mortgage bonds of predecessor company to reimburse company for expenditures already made, for drilling new wells and acquiring additional gas acreage, etc.; company supplies gas to Homer, Minden, Haynesville, also supplies gas to Arkansas Natural Gas Co., Little Rock, Ark.

Mo., St. Louis—St. Louis Oil Co. incorporated; W. E. Grooms, 5930 Rena Place.

Mo., Springfield—Queen City Oil Co., cap-

ital \$20,000, incorporated; Tony Gorges, 624 South Ave.

Tex., Beaumont—North Beaumont Oil Corp., capital \$10,000, incorporated; W. C. Gray, 324 Fannin St.

Tex., Happy—See Water Works.

Tex., San Antonio—Service Drilling Co., incorporated; J. L. Collins, 217 Ord St.

Tex., San Antonio—Murchison Oil Co. incorporated; C. W. Murchison, 118 E. Summit St.

Tex., Wichita Falls—Fair-McGaha Oil Corp. incorporated; L. D. Fain, Staley Bldg.

Tex., Wichita Falls—Mackechney Drilling Co. incorporated; E. R. Fain, John Mackechney, Perkins-Snyder Bldg.

W. Va., Huntington—Wright Oil Service Co. and Sterling Oil Products Co. reported consolidated unded ownership of Wright Oil Service Co.; offices at Chesapeake R. R. and Thirty-first St.; combined storage capacity 300,000 gals. gasoline.

W. Va., Jacksonburg—South Penn Oil Co., 545 Wm. Penn Way, Pittsburgh, Pa., reported to construct reduction plant.

### Ice and Cold-Storage Plants

Ark., Prescott—Southern Ice & Utilities Co., 520 Sante Fe Bldg., Dallas, will erect 190x60-ft. plant; concrete construction, concrete floors, tar and gravel roof; estimated cost \$100,000; install \$75,000 equipment, including 60-ton ice-making equipment, piping, etc.\*

Fla., Gainesville—General Engineering and Management Corp., J. W. Carpenter, 165 Broadway, New York City, advises the following concerning the Diamond Ice Co. in Gainesville and additional plants: "We propose upon completion of the transfer to erect a new modern ice plant of 75 tons capacity, electrically operated, at Gainesville; will also modernize the High Springs plant, electrifying the operation throughout; at present time we have option available for land at Ocala for similar ice and cold storage plant, in which place construction plans will shortly be announced."\*

Fla., Melbourne—Florida Power and Light Co., Civic Bldg., Miami, has permit for \$100,000 ice plant on Dixie Highway; tile and stucco construction.

Fla., Sebring—J. C. Pereno, 1533 S. W. Third St., Pres. of the J. C. Pereno Engineering Co. of Miami, reported purchased plant of Sebring Ice Co.; will install additional equipment, increasing daily capacity from 25 to 40 tons.

Fla., Tallahassee—State and County will expend about \$35,000 on establishing co-operative cold storage plant; C. S. Hammatt, State Engr.; C. F. Leach, Sec., Jefferson County Chamber of Commerce.

Md., Baltimore—See Miscellaneous Enterprises.

Mo., Monett—The Railway Ice Co. reported will expend about \$150,000 on improvements, increasing capacity from 70 to 150 tons daily.

S. C., Columbia—The City Ice Co., capital \$60,000, incorporated; Joseph M. Bell, 1007 Bull St.

S. C., Myrtle Beach—C. G. Timberlake, Pres. of Hartsville Ice and Fuel Co., Hartsville, reported acquired site at Myrtle Beach for ice and cold storage plant.

Tex., Amarillo—Badger Ice Co. reported let contract to M. C. Hancock Construction Co., 1018 W. Sixth St., to construct 1-story brick building, composition roof, wood and concrete floors; estimated cost \$37,500.\*

Tex., Brownwood—The Morgan-Wade Utilities Corp., A. O. U. W. Bldg., Little Rock, Ark., reported acquired plant and business of Crystal Ice Co.; plans enlarging plant, increasing output by 30 tons.

Tex., San Antonio—Duerler Manufacturing Co., Herff St., received low bid from Ed. W. Oeffinger, Builders Exchange Bldg., at \$18,490 for cold storage building adjoining factory; Herff & Jones, Archts., S. A. Loan and Trust Co. Bldg.\*

### Land Development

Ala., Albany-Decatur—Col. W. B. Edmundson reported to develop subdivision; construct streets and sidewalks.

Ark., Fayetteville—Boston Mountains Development Co., organized by W. A. King, H. W. Sanford; acquired 60-acre tract near Springdale; will develop.

Fla., Coral Gables—Coral Gables Consolidated, Inc., reported let contract to T. T. Sweet Dredging Co., 302 S. W. North River Drive, Miami, for developing Biscayne Bay section No. 1; contract involves \$4,000,000; includes dredging lakes, water channels, building roads, sidewalks, etc.\*

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Fla., Delray—E. Roscoe Allen, Inc., capital \$15,000, chartered; E. Roscoe Allen, Ronald W. Allen.

Fla., Jacksonville—Garrett Properties, Inc., chartered; H. B. Garrett, 2418 Riverside Ave.

Fla., Jacksonville—American Bulb Corporation of Florida, 301 Biscay Bldg., Major Y. O. Brown, Pres., has 2000 acres; will develop 30 acres for paper-white narcissus; C. P. Guille of Southern Bulb Co. will supervise first 200,000 bulbs; construct warehouse and packing house combined; cost about \$5000; additional units as progress is made; amount to be expended will vary during 15-year program.\*

Fla., Kissimmee—Suffolk Realty Co., incorporated; Ben T. Snyder, W. W. Bonney.

Fla., Lake Stearns—See Water Works.

Fla., West Palm Beach—Dr. F. G. Swartz, Nottingham Blvd., and Charles Torkelson, East Hampton, Conn., reported acquired 1300 acres of muck land in Pahokee; will develop; Riddle Co., Engr., 421 S. Olive St., West Palm Beach; plans canning and packing plant, market, etc.

Fla., Miami—Alrose Investment Corp., capital \$25,000, incorporated; Louis J. Hamel, Miami Bank and Trust Co. Bldg.

Fla., Miami—Dewitt Properties, Inc., chartered; Paul D. McGarry, Huntington Bldg.

Fla., Miami—Seaboard Industrial Properties, Inc., chartered; M. L. Shively, J. A. Dewberry.

Fla., Miami—Shaw Holding Co., incorporated; E. B. Ward, Ralston Bldg.

Fla., Miami—Arren Holding Co., incorporated; A. T. Carter, 2005 W. 13th Ave.

Fla., Miami—Kleier & O'Donnell, Inc., Suite 1407-8 Congress Bldg., has 78,352 acres in Bay and Gulf Counties; proposed to develop by clearing land of stumps, dead timber, etc.; construct in units a retort plant of 60 cords capacity per day for utilization of stumps, fallen and dead timber by distilling them for naval stores products; remove standing timber for manufacture into lumber, shingles, ties, etc.; place upon land large herd of sheep for grazing purposes; plant land in clover and other crops and possible fruit raising; later development of townsite; E. A. O'Donnell, Engr., Panama City.

Fla., Sarasota—Leadley Ogden Co., incorporated; Leadley Ogden, Pineapple Ave. and Seventh St.

Fla., Tampa—Tampa Riverside Estates, Inc., incorporated; Albert Zimmerman, R. H. Daley.

Fla., West Palm Beach—Yelraek Corp., incorporated; S. C. Kearley, First American Bank Bldg.

Ga., Brunswick—F. E. Twitty acquired 54 acres on Coastal Highway and has option on 100 acres; will develop.

Ga., Waycross—J. C. Patterson, Miami, Fla., plans developing 2500 acres in Coffee County for stock farm.

La., New Orleans—Fellman Estate, Inc., capital \$12,000, incorporated; Leo Fellman, 325 Baronne St.

Md., Baltimore—Long Point Realty Co., Standard Oil Bldg., incorporated; Arthur E. Poultney, G. Bernard Fenwick.

Md., Baltimore—Starr Realty Co., 557 Calvert Bldg., capital \$15,000, incorporated; Ernest W. Beatty, Hiram C. Griffin.

Mo., St. Louis—Fairmount Realty Co., capital \$36,000, incorporated; Otto H. Kortkamp, 5075 Raymond St.

Mo., St. Louis—Harsol Realty Investment Corp., capital \$50,000, incorporated; Sol E. Kopelowitz, 740 Interdrive.

Mo., St. Louis—Goullias Realty Co., capital \$15,000, incorporated; B. E. Hamilton, 705 Wainwright Bldg.

Mo., St. Louis—Riverfront Realty Co., capital \$20,000, incorporated; S. C. Tracy, 7562 Warner St.

Mo., St. Louis—Albert Wenzlick Real Estate Co., 1010 Chestnut St., capital \$60,000, incorporated; Albert Wenzlick.

N. C., Asheville—Griffing-Pinnacle Estates, capital \$400,000, incorporated; Arthur M. Griffing, Flat Iron Bldg.

N. C., Greenville—Greenville Development Co., capital \$100,000, incorporated; M. L. Wright, M. K. Blount.

N. C., New Bern—Coplon Investment Co., capital \$500,000, incorporated; Harry Coplon, 808 Brooks Lane, Baltimore, Md.

N. C., Raleigh—Fuller Heights, Inc., capital \$50,000, chartered; Leon S. Brassfield, State Theater Bldg.

N. C., Wilson—Atlantic Improvement Co., capital \$100,000, incorporated; W. E. Smith, Wilson Trust Bldg.

S. C., Columbia—Forest Hills, Inc., Joseph

Walker, Pres., L. & E. Bank Bldg., has 94 acres, 65 of which are under development for subdivision; Tomlinson Engineering Co., Constr. Engr., 1224 Sumter St., Columbia; Harlon P. Kelsey, Landscape Archt., Salem, Mass.

S. C., Spartanburg—Connecticut Heights Land Co., capital \$60,000, incorporated; A. C. Willard, 611 Rutledge St.

Tenn., Knoxville—Lintz Realty Co., capital \$10,000, incorporated; W. O. Lintz, 407 W. Depot St.

Tex., Austin—Austin Development Co., S. W. Fisher, Pres., 2702 Guadalupe St., has 165 acres on Shoal Creek Bluff; will develop 30 acres for subdivision; let contract for 5 miles paved streets and sidewalks, water, lights, sewers, gas, etc.; expend \$250,000; Kock & Fowler, Archts., Central Bank Bldg., Dallas.\*

Tex., Dallas—Cactus Hill Land and Cattle Co., capital \$26,000, incorporated; W. H. Aston, H. John.

Tex., Mercedes—H. E. Cornell, V. P., Glen St. Mary Nurseries Co., Glen St. Marys, Fla., reported to develop citrus grove.

Tex., Raymondville—W. A. McKenzie, Smackover, Ark., will develop 876 acres for colonization, also plans developing 160 acres near Lyford; construct number of business houses and residences.

Tex., San Antonio—Harlandale Gardens Co., Corpus Christi Rd., reported acquired 176 acres on Frio City Rd.

Tex., San Benito—A. Wayne Wood, Brownsville, R. M. Clark, Webb City, Mo., reported to develop 2100 acres.

Tex., Stamford—Swenson Land and Cattle Co., capital \$1,000,000, incorporated; A. J. Swenson, J. E. Swenson.

Va., Clarksville—Thomas Abner Davis of Virginia Ham Farms and associates reported interested in development of subdivision.

Va., Richmond—Muhleman & Kayhoe, 108 N. Ninth St., reported acquired tract on Hanover Ave.; will develop.

### Lumber Enterprises

Fla., Miami—See Land Development.

Ga., Cochran—Dykes Bros. Lumber Co., capital \$10,000, incorporated; J. R. Dykes, A. W. Dykes.

Miss., Meridian—Morgan Hardwood Co., incorporated; C. M. Little, Marshall W. Amis.

Mo., St. Louis—Consolidated Lumber Co., Inc., capital \$150,000, chartered; C. F. McKnight, 5745 Grand Ave.

Tenn., Eastlake, Br. of Chattanooga—Bowlers Manufacturing Co., 3446 S. Hill St., Los Angeles, Cal., reported acquired the plant of the G. H. Evans Lumber Co., 43rd St., including lease on plant buildings and ground, as well as outright purchase of machinery.

Tex., Abilene—Home Lumber Co. of Abilene, capital \$25,000, chartered; W. H. Babb, L. L. Babb.

### Metal-Working Plants

La., New Orleans—New Orleans Sheet Metal Works, Inc., 630 Chartres St., chartered; Angel Ibiquerdo, Jos. C. Budde.

Tenn., Memphis—Metal Products Corp., capital \$10,000, chartered; D. H. White, 2255 Madison St.

### Mining

Ark., Little Rock—Little Rock Stone Co., capital \$75,000, incorporated; J. W. Carmean, Frank Carmean, Park Hill; will resume work in old quarry installing machinery.

La., Shreveport—Perfection Gravel Sales Co., Inc., capital \$50,000, chartered; T. G. Roberts, J. W. Sanders, 1038 Sheridan Ave.

Mo., Liberal—Kansas City Asphalt Mining and Milling Co., 404 Hall Bldg., Ninth and Walnut Sts., Kansas City, has 480 acres to be developed, not in operation yet; install hoist, crusher and rolls, practically all purchased; W. H. Simpson, Const. Engr.\*

Tenn., Chattanooga—Manganese Ore Mining Corp., capital \$15,000, chartered; F. E. Spencer, Signal Mountain.

### Miscellaneous Construction

Ala., Mobile—Incinerators—City Comsn. let contract to Superior Incinerator Co., Wilson Bldg., Dallas, Tex., for two 50-ton incinerators.\*

Fla., Delray—Yacht Basin—See Miscellaneous Enterprises.

Fla., Key Largo—Seawall, etc.—Harry Tidd will expend \$100,000 on development of ocean front; let contract to Mutti & Pierce for rock fill with seawall or rock and rip-rapped front, canal and yach basin with channel of

deep water, included, etc.; Biscayne Engineering Co., Engrs., Havlin Bldg., Miami.

Fla., Lakeland—Seawall, etc.—Anton Schneider, City Mgr., advises following regarding certain features of Lake Mirror Civic Center to be constructed at Lakeland: "Let contract to H. B. Trauger, 311 W. Hancock St., at \$132,740; contemplated work consists of construction of seawall topped by an ornamental balustrade to extend halfway around lake; gravel promenade and concrete walkway completely around the lake; two reinforced concrete boat landings ornamented with stone columns, reinforced concrete retaining wall topped by a balustrade; reinforced concrete loggia having arched roof, stone columns and arches and flagstone flooring; installation of complete lighting system and building 40-foot roadway around one side of lake; Charles Welford Leavitt, Archt., 285 Madison Avenue, New York City; J. W. Bradner, Const. Engr., City Hall, Lakeland."

Fla., Tallahassee—Incinerator—City has \$50,000 available for construction of municipal incinerator; B. H. Bridges, City Auditor and Clerk. See Financial News—Bond Issues Proposed.\*

Md., Baltimore—Port Improvements—City. Howard W. Jackson, Mayor, will expend approximately \$25,000,000 on improvements and developments of south Baltimore waterfront; construction to begin about March 1; tentative plans for improvements include \$4,000,000 railroad merchandise pier on McComas St.; viaduct on Hanover St.; change bed of McComas St.; build Russell St. boulevard, etc.

Tex., Beaumont—Swimming Pool—City, J. Austin Barnes, Mayor, contemplates constructing municipal swimming pool.

### Miscellaneous Enterprises

Ala., Birmingham—The Anc-Co. Preserving Co., A. N. Chappell, Pres., S. Fifth Ave., has permit for construction of \$41,000 factory at Seventh Ave. N. and Seventh St., Smith Park; work begun.

Fla., Bushnell—Sumter County Chamber of Commerce contemplates establishing small canning plant. (See Machinery Wanted—Canning Machinery.)

Fla., Delray—City Comms. reported have tentative plans for municipal improvements extending over period of years; work includes erection of casino and pier, street paving and yacht basin in the Florida East Coast Canal. Address City Clerk.

Fla., Jacksonville—Graybar Electric Co., 334 E. Bay St., reported, soon let contract for construction of branch plant; Lockwood, Greene & Co., Engrs., Healy Bldg., Atlanta, Ga.

Fla., Miami—See Land Development.

Fla., Miami—Embalmers—W. H. Combs Co., capital \$50,000, incorporated; W. H. Combs, Sr., 1533 N. E. Second Ave.

Fla., Ocala—Fire Fighting Equipment—City Comn., Charles E. Simmons, Pres., contemplates installing fire fighting equipment.

Fla., Orlando—Hyland-Standard Co., Inc., 8 Murphy Arcade, main office 658 Mesquit St., Los Angeles, Cal., will erect 60x140-ft. plant; Truscon construction, cement floor, steel roof, estimated cost \$20,000; install \$25,000; plans all completed. (See Machinery Wanted—Boiler.)\*

Fla., Pensacola—Chemical Products Co., incorporated; John Starke, B. Huff.

Fla., Sarasota—Sebastian Mercantile Co., incorporated; E. W. Vickers, W. H. Read.

Fla., Stuart—The Plumbing Co., capital \$10,000, incorporated; W. H. Leopard, Gelaine B. Hutchinson.

Fla., Tallahassee—Traffic Signals—City plans installing 4 traffic control stops with all necessary equipment; receives bids Jan. 11; Wm. R. Galt, City Mgr.; B. H. Bridges, City Clerk. (See Machinery Wanted—Traffic Equipment.)

Fla., Tampa—Tampa and Sarasota Navigation Co., Inc., chartered; A. B. Chilton, W. P. McCoy.

Fla., Tampa—Building Materials—Margeum Rock Asphalt Block, Inc., chartered; H. L. Bowby, R. W. Sanders.

Fla., Tampa—Electric Motor Co., Inc., chartered; C. A. Wederbrand, 803 Ferdinand St.

Fla., Titusville—Coca-Cola Bottling Co. has permit for 48x90-ft. building; steel frame, cement blocks, concrete foundation, asbestos roof.

Md., Williamsport—Tanners—W. D. Byron Co., Walter Byron, reported, plans erecting 1-story brick and steel addition; John D. Hamilton, Engr., Lexington Bldg., Baltimore, Ga., Atlanta—Swift & Co., E. B. Adams,

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



Local Mgr., Grant Bldg., will soon call for bids for erection of plant at Peters and Fair St.\*

Ga., Griffin—Mercantile—The Model Co., Inc., capital \$12,000, chartered; H. F. Goldstein, Mrs. B. S. Newman.

Ky., Louisville—Progress Paint Manufacturing Co., 826 W. Main St., increased capital, \$30,000 to \$200,000.

La., Myrtle Grove—Myrtle Grove Syrup Co., Inc., capital \$20,000, chartered; Albert P. Cantrelle, Mrs. Zoe Topping.

La., New Orleans—Contracting—J. N. Clements & Co., Inc., chartered; James N. Clements, 1109 St. Anthony St.

Md., Baltimore—Meat Packers—Greenwald Sons Co., Union Stock Yards, acquired site at 218 S. Eutaw St.; will erect refrigeration plant to use as downtown salesrooms.

Md., Baltimore—Drugs—Sharp & Dohme filed papers for reincorporation, seeks permission to issue 20,000 shares preferred stock and 100,000 shares of common stock.

Md., Cumberland—Hall and Marquis Tailors, Inc., 39 N. Mechanic St., capital \$25,000, incorporated; Ardle W. Hall, Orville M. Marquis.

Mo., Fulton—The Sun Printing Co., publisher of the Fulton Daily Sun and Weekly Telegraph, purchased the Evening Gazette and the Weekly Gazette; will merge publications.

Mo., Kansas City—Printing—Roach Fowler Co., capital \$150,000, incorporated; Arno L. Roach, 3005 E. Sixth St.

Mo., Kansas City—C. J. List Construction Co., capital \$100,000, incorporated; W. M. List, Railway Exchange Bldg.

Mo., Kansas City—Reinold Manufacturing Corp., chartered; Wm. W. Barton, 5540 Central Ave.

Mo., Kansas City—C. S. Demaree Printing & Stationery Co., capital \$50,000, incorporated; Chas. S. Demaree, 708 Walnut St.

Mo., Kansas City—Sweet Springs Dairy Co., incorporated; Frank H. Sweet, F. J. Small, Independence, Mo.

Mo., Kansas City—Wax Paper—Maurice Realty Co., reported, erect 2-story and basement, 100x128-ft. factory building, at Berkowitz and Tracy Ave., concrete construction; estimated cost \$75,000; open bids about Jan. 15.

Mo., Kansas City—Reproducing Records—Wabine Co., capital \$10,000, incorporated; J. J. Warner, 5638 Locust St.

Mo., Springfield—Pauly Construction Co., capital \$10,000, incorporated; Will F. Pauly, 741 South Ave.

Mo., St. Louis—Missouri Glue Co. increased capital \$35,000 to \$100,000.

Mo., St. Louis—Skirts, etc.—Kopelowitz Bros., Inc., increased capital \$20,000 to \$80,000.

Mo., St. Louis—Grand Avenue Theaters, Inc., chartered; Spyros P. Skouras, 6633 University Drive.

Mo., St. Joseph—Insulating Boards, etc.—Stewart Insoboard Co., capital \$375,000, incorporated; Wm. Albrecht, Wm. L. Goetz.

Mo., St. Louis—Storage, etc.—Missouri Auction Co., capital \$10,000, incorporated; Louis Goldberg, 915 Franklin St.

Mo., St. Louis—St. Louis Window Fixture Display Co., capital \$20,000, incorporated; Isadore Eisenstein, 5141 Waterman St.

Mo., St. Louis—Modern Coal and Material Co., capital \$60,000, incorporated; A. J. Ketzner, 2632a Cherokee St.

Mo., St. Louis—Food Products—Mound City Products Co., capital \$75,000, incorporated; Albert S. Dexheimer, 4911 Maffitt Place.

Mo., St. Louis—DeBoard Plumbing Co., 1431 N. Union St., capital \$60,000, incorporated; L. DeBoard, R. M. DeBoard.

Mo., St. Louis—Electrical Equipment—The Bussman Manufacturing Co., 3819 N. 23d St., acquired 5-story structure at 2536-48 University St.; will remodel, office and factory space will be more than double present location.

Mo., Webb City—The Smith Brothers Manufacturing Co. will establish branch factory to manufacture shirts.

N. C., Asheville—Plumbing, etc.—Sugg & Britt, capital \$100,000, incorporated; Hugh C. Brown, 96 Washington Rd.

N. C., Burlington—Burlington Notion Co., Inc., capital \$25,000, chartered; W. B. Sanders, C. D. Gattis.

N. C., Charlotte—Contractors' Equipment—Lloyd B. Lent, Inc., W. Eighth St., capital \$25,000, chartered; Lloyd B. Lent.

N. C., Charlotte—Huntley Bros. Vulcaniz-

ing Co., capital \$50,000, incorporated; J. H. Huntley, 1575 E. Fourth St.

N. C., Charlotte—Interior Decorating—Eric I. Johnson, Inc., capital \$50,000, chartered; J. R. Marus, 5 Colonial Ave., Myers Park.

N. C., Charlotte—Blue Ribbon Bakery, Inc., capital \$50,000, chartered; Henry R. Drake, 405 Worthington Ave.

N. C., Durham—Smith Overall Co., capital \$50,000, incorporated; W. T. Pollard, 211 N. Dillard St.

N. C., Kinston—Lenoir Poultry Farms, Inc., capital \$25,000, chartered; John C. Hood, Perry St.

N. C., Sanford—Snow White Laundry, Inc., capital \$50,000, chartered; S. T. Ingram, H. N. Cannon.

S. C., Blackville—E. C. Matthews and associates contemplate establishing small canning plant. (See Machinery Wanted—Canning Machinery.)

Tenn., Athens—Union Ice Cream Co., T. B. Mayfield, Jr., Propr., plans erecting ice-cream plant, cor. Park and Green St.; 1 story, 36x60 ft., brick; construction by owner.

Tenn., Chattanooga—Southern Cotton and Paper Co., incorporated; Mercer Reynolds, 850 Vine St.

Tenn., Columbia—Woldridge Drug Co., Inc., capital \$24,000, chartered; E. R. Walker, C. W. Tucker.

Tenn., Jackson—Long-Johnson Printing Co. increased capital \$35,000 to \$70,000.

Tenn., Knoxville—S. and W. Cafeteria of Knoxville, Inc., capital \$25,000, chartered; Ben H. Testerman, Bankers Trust Bldg.; remodel building 610 S. Gay St.; work begun.

Tenn., Memphis—Extracts—The Specialty Manufacturing Co., J. P. J. Bruce, Jr., Pres., 202 E. Mallory Ave., have begun rebuilding burned plant; new structure will be fireproof and brick; estimated cost \$20,000; temporary office at Wurzburg Brothers Warehouses on S. Fourth St.\*

Tenn., Memphis—Agricultural Products—R. T. Clarkson Co., 267 Court St., capital \$100,000, incorporated; R. T. Clarkson, L. W. Wilkins.

Tenn., Memphis—W. B. Johnson Well Co., capital \$10,000, incorporated; Albert Goldsberry, 1201 Dunnivant St.

Tenn., Murfreesboro—Carnation Milk Products Co., Walter Page, V. Pres., Oconomowoc, Wis., advises: "We are going to establish a milk condensing plant at Murfreesboro; we do our own construction work and have the equipment for same pretty well lined up; the plant will be constructed of reinforced concrete."\*

Tex., Amarillo—Panhandle Tank Co., Amarillo Bldg., incorporated; A. L. Scudder, J. R. Stegall.

Tex., Beaumont—See Concrete and Cement Plants.

Tex., Beaumont—Lamb Printing Co., 239 Bowie St., and the Electric Service Co., Orleans St., will occupy new building to be erected cor. Main and Liberty Ave., 55x115 ft., foundation for additional stories; erected by Sam Fertitta, 340 Alexander Bldg.; estimated cost \$25,000; soon begin work.

Tex., Borger—Borger Publishing Co., Inc., chartered; Thomas G. Blanton; will publish paper to be known as The Borger Telegraph.

Tex., Childress—Hotel Nave, capital \$20,000, incorporated; A. B. Nave, Reid Scott.

Tex., Coleman—S. J. Mathis acquired site; will erect bottling plant for manufacture of soft drinks; install equipment; estimated cost \$30,000.

Tex., Corsicana—Daviss Floral & Nursery Co., Inc., chartered; E. Paxton Daviss, Jr., Robert Cooksey.

Tex., Dallas—Lawson Rubber and Manufacturing Co., Inc., erecting new building adjoining factory No. 2, frame, concrete floors, construction by owner; install all type new and modern boot making machinery.\*

Tex., Dallas—Wilkins Trunk Manufacturing Co., 1109 Elm St., reported let contract to Churchill-Humphrey Co., 207 Magnolia St., at \$21,998 for erection of factory building; 2-story, 60x140 ft., brick, stone and reinforced concrete; J. A. Pitzinger, Archt., 807 S. W. Life Bldg.

Tex., Dallas—Dallas Animal By-Products Co., capital \$10,000, incorporated; Harry Golden, L. J. Patterson.

Tex., Dallas—Construction—Julian C. Field Co., capital \$50,000, incorporated; Julian C. Field, 241 S. Ewing St.

Tex., Dallas—Texas Cheese and Butter Co., incorporated; N. W. Palmer, 3313 Dartmouth Street.

Tex., Houston—Blue Bonnet Hotel Co., capital \$10,000, incorporated; Floyd Singleton, 4619 Walker St.

Tex., Houston—Handy-Andy Community Stores, Inc. of Texas, capital \$10,000, chartered; S. E. Smith, 711 E. 30th St.

Tex., Houston—Peoples Utilities Corp., chartered; W. A. Parish, 3918 Mt. Vernon Ave.

Tex., San Antonio—Gem Jewelry Co., Inc., capital \$20,000, chartered; J. I. Brinbaum, M. Lippsoff.

Tex., San Antonio—Talcott Electric Co., Inc., 226 College St., capital \$10,000, chartered; James C. Talcott, Jr.

Tex., San Antonio—Southern Pecan Shelling Co., capital \$100,000, incorporated; J. Sellgmann, Gunter Hotel.

Tex., San Antonio—See Airplane Plants, Stations, etc.

Tex., San Antonio—Main Avenue Pharmacy, 653 Main St., capital \$10,000, incorporated; Carter Sommers, Louis Saur.

Tex., Wichita Falls—The North Texas Co., capital \$50,000; Durward McDonald, 708 Ninth St.

Tex., Wichita Falls—Swift & Co., care of C. H. Lane, Const. Dept., 33 S. Clark St., Chicago, Ill., reported let contract to W. H. Allen, 1300 Fifth St., for construction of \$25,000 building; 2-story, 47x54 ft., brick and stone.

Va., Portsmouth—Polishes, Insecticides, etc.—Varnigloss Corp., V. C. Randall, Pres., advises changed name from Gregory Laboratories, Inc., and increased capital in order to keep more materials on hand and to enlarge and expand territory now covered by representatives.\*

Va., Richmond—Gummed Products—The Wortendyke Manufacturing Co., Bruce Livy, Vice-Pres., foot 13th St., purchased business and equipment of the Peters Co., Inc. of Brooklyn, N. Y., specialists of gummed products; will transfer stock and machines to Richmond, located in the Kanawha warehouse adjoining the Wortendyke factory; to be in operation in January.

W. Va., Clarksburg—Publishing—Artercraft Corp., capital \$25,000, chartered; W. Frank Stout, Arcade Bldg.

W. Va., Huntington—The Maryland Co., Lexington Bldg., H. E. Weinberg, Pres., Baltimore, Md., reported will establish branch plant on Adams Ave., near W. Twenty-third St.; reinforced concrete, 3 story, 150x50 ft.; install machinery for manufacture of overalls, work shirts, etc.; has branch plants at Denton, Md.; Luray, Elkton, Shandoah, Woodstock and Mount Jackson, Va.; Meador & Henderson, Archts., 1139 Fourth Ave., Huntington.

### Motor Bus Lines and Terminals

La., Lake Charles—Louisiana Electric Company, D. C. McManus, Supt., reported, establish motorbus system; purchased 9 buses with capacity of 21 passengers each; begin operation about Jan. 15.

S. C., Conway—Coastal Bus Co., organized by A. W. Lewis, Chas. S. Scarborough; establish bus line between Conway and Georgetown.

Tenn., Johnson City—The E. T. and W. N. C. Motor Transportation Co., J. E. Vance, V. Pres. (recently incorporated), reported, purchased from the Tennessee Transit Co. the buses operated between Johnson City, Elizabethton, Hampton, Roan Mountain, Elk Park, Cranberry, Plumtree and other North Carolina points, including transit company's franchise on route; contemplates extension of line; Joseph D. Leach supervise operation of buses.

W. Va., Wheeling—Wheeling Public Service Co. granted franchise to operate bus lines between Wheeling and Elm Grove.

Tenn., Chattanooga—Tennessee Electric Power Co. has permit for operation of bus lines in connection with street railway system.

### Motor Cars, Garages, Filling Stations

Ala., Birmingham—W. H. Brooks, Arlington Place, let contract to Johnson Construction Co., 607 American Trust Bldg., for erection of tire and filling station, cor. N. First Ave. and 14th St.; 2 story, brick and steel, fireproof, steel sash, concrete and wood floors; Turner & McPherson, Archts., American Trust Bldg.

Ala., Birmingham—Mrs. R. G. Baster, 2015 N. Fourth Ave., let contract to J. M. Johnson, 607 American Trust Bldg., for erection of filling station at Tuscaloosa and Charles St.; 1 story, 30x20 ft., brick veneer, concrete floors, composition built-up roof.

Ala., Sulligent—Gaynor Johnson and G. E.

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Bankhead will remodel building for drive-in filling station.

Fla., Daytona Beach—See Telephone System.

Fla., DeLand—Erwin Motor Co., Inc., capital \$25,000, chartered; H. F. Erwin, A. B. Whiting.

Fla., Jacksonville—Royal Motors Co., A. G. Hoskins, Pres., reported contemplates erecting \$175,000 building on Riverside Ave.; 2-story, contain approximately 28,000 sq. ft. floor space, tile and stucco construction, Spanish type architecture; soon begin work; C. P. Schoepel, Archt.

Fla., Miami—Pomeroy-Overland Co., 165 N. E. Sixth St., has permit for erection of \$60,000 automobile showroom and service station at 1622 N. E. Second St., 2-story, 60x211-ft., concrete; Sandquist & Snow, Contrs., Calumet Bldg.; T. C. Haire, Archt.

Fla., Sarasota—C. C. Bullard, 245 S. Osprey Ave., plans erecting filling station on Lemon Ave.

Fla., Tampa—Garages, etc.—J. Frank Childs Co., Inc., chartered; J. Frank Childs, H. E. Roach.

Md., Baltimore—The General Tire Co., 914-16 Cathedral St., chartered; Richard B. Roche, Michael J. Sweeney.

Md., Cumberland—Kelly-Springfield Tire Co., H. Smith, Mgr., reported, contemplates erecting \$200,000 addition, 2 and 3 story, concrete and steel; receive bids about March 1; Mark Rowe, Engr.

Md., Frederick—Standard Oil Co. purchased property cor. Market and South Sts.; will erect filling station.

Md., Hagerstown—Dr. E. A. Wareham, 136 W. Washington St., reported, let contract to J. B. Ferguson & Co., 39 W. Washington St., for 3-story, 100x120-ft. garage, showroom and apartment building on W. Washington St.; estimated cost \$100,000; receive bids on separate contracts about March 1.

Miss., Lexington—The Panhandle Oil Co. will erect filling station with entrances on three streets, Carrollton, Cedar and Tchula.

Mo., Bonne Terre—East Side Motor Co., capital \$25,000, incorporated; P. L. Benham, S. B. Sparks.

Mo., Kansas City—Midwest Enameling Co., 2124 Pennsylvania Ave., capital \$10,000, incorporated; E. J. Walberg; refinish automobiles, etc.

Mo., Kansas City—Fidelity National Bank and Trust Co. reported will erect \$15,000 filling station, tire repair and accessory shop cor. Twentieth St. and Baltimore Ave.

Mo., Kennett—Pickard Wilson Motor Co., capital \$10,000, incorporated; L. A. Pickard, W. F. Shelton.

Mo., Marshall—Automobile Accessories—Nicholas-Beazley Airplane Co., Inc., capital \$25,000, chartered; Russell Nicholas, Howard Beazley.

Mo., Springfield—Crump & Shipp Auto Works, capital \$20,000, incorporated; Ewell S. Shipp, 804 E. Elm St.

Mo., St. Louis—Champion Motor Service Co., Inc., 1800 Cass Ave., chartered; Frank W. Tomasso.

Mo., St. Louis—Saint Louis Tire Service Co., Inc., capital \$50,000, chartered; G. E. Thilenius, 6149 Pershing St.

Mo., St. Louis—Fisher Automotive Service Corp., Whittier and Delmar Sts., has building for garage service; install general repair shop equipment. (See Machinery Wanted—Brake-Testing Machinery; Wheel Liners; Brake-Lining Machinery.)

Mo., Springfield—Thompson Tire Co., capital \$100,000, incorporated; Geo. W. Thompson, J. Max Thompson.

N. C., Asheville—Herbert R. Millard, 49 College St., has permit for erection of \$20,000 garage, 50x114 ft., brick and steel construction.

N. C., Asheville—The J. Gorman Low Auto Electric Service, Inc., capital \$25,000, chartered; C. M. Barksdale, 107 Broad St.

N. C., Hendersonville—Hermes Motor Co., capital \$50,000, incorporated; T. B. Hermes, E. W. Whitman.

N. C., Winston-Salem—Auto Accessories—Hug-Me-Tite Manufacturing Co., Inc., capital \$100,000, chartered; C. J. Livengood, R. C. Weatherman.

Okla., Blackwell—The Texas Co. soon begin building filling station, cor. Main and Dewey Ave.; cost between \$5000 and \$10,000; A. S. Dunaway, local representative.

Okla., Tulsa—Marland Refining Co., N. Lewis St., reported contemplates building filling station cor. Fourth St. and Denver Ave.

Tenn., Memphis—I. A. Baum, Columbian Tower, reported contemplates building filling

station at Cooper St. and Poplar Ave.; 1 story, 18x30 ft., brick, built-up roof, tile; estimated cost \$10,000.

Tenn., Memphis—Baptist Memorial Hospital, \$40,000 garage. (See Contracts Awarded—Hospitals, Sanitariums, etc.)

Tenn., Nashville—R. L. Stockard, Nichol Bldg., receiving bids for \$30,000 garage and showroom at 23rd Ave. and Cedar St.; 50x130 ft., stucco construction.

Tex., Amarillo—Marland Refining Co., 601 Jackson St., started work on filling station, 1 story, 25x16 ft., brick, concrete floors, asbestos shingle roof; materials and equipment furnished by U. S. Air Compressor Co., 5300 Harvard St., Cleveland, Ohio; United Clay Products Co., Lee Bldg., Kansas City, Mo.; King Mfg. Co., 230 S. Clark St., Chicago, Ill.; Mosler Safe Co., 714 Delaware St., Kansas City, Mo.; R. V. Aycock Co., 307 W. First St., Tulsa, Okla.

Tex., Harlingen—C. B. Wood will erect sales building on W. Jackson St.; 2 story, 50x130 ft. and 50x75 ft., brick and concrete; Roy Mulhausen, Archt. (See Machinery Wanted—Metal Ceilings.)

Tex., Harlingen—Wells Valley Buick Co. begun excavation for building; A. Goldammer, Contr. and Archt.

Tex., Harlingen—C. B. Wood let contract to Meriwether and Sauer for erection of automobile building; R. W. Mulhausen, Archt.

Tex., Harrisburg—Gulf Refining Co. let contract to Henry H. Yates, Humble Bldg., for erection of filling station at Broadway and La Porte road.

Tex., Houston—J. L. Jones reported let contract to Henry H. Yates, Humble Bldg., at \$16,678, for erection of garage on Polk St., reinforced concrete, brick and tile; J. W. Northrop, Jr., Archt., West Bldg.

Tex., Houston—Halley Tire Co., capital \$40,000, incorporated; Raymond Pearson, 1110 N. Main St.

Tex., San Antonio—Nevelow Bros., Nathan Nevelow, Mgr., Travis St., contemplates building automobile accessory building on Main Street.

Tex., San Antonio—Buick Motor Co., 929 Broadway, reported let contract to W. C. Thraikill, Builders' Exchange Bldg., for construction of 3-story brick and concrete building; estimated cost \$110,000.

Tex., San Antonio—Carroll B. Bassett, 203 Lexington St., plans erecting filling station at Lexington and Maple St.; 1 story, hollow tile, brick and stucco; Beverly W. Spillman, Archt., Alamo Bank Bldg., soon let contract; A. Vogel & Co., 319 Jones St., low bidder.

W. Va., Point Pleasant—Lovell Motor Sales Co., capital \$25,000, incorporated; J. J. Lovell, John C. Arter.

### Railway Shops and Terminals

Fla., Pensacola—St. Louis-San Francisco Ry. Co., J. M. Kurn, Pres., St. Louis, Mo., reported let contract to W. Horace Williams Co., 816 Howard Ave., New Orleans, La., for shop buildings, acquired 12-acre site; preliminary work, laying yard tracks, erecting warehouse, etc., recently noted.

Miss., Durant—Illinois Central System, Frank R. Judd, Engr. of Bldgs., advises relative to replacing coaling station recently burned: "To date no action has been taken with regard to rebuilding this coaling station."

Tex., Childress—Fort Worth & Denver City Ry. Co. lately noted reported to erect \$100,000 repair shop; M. A. Stainer, Engr., M. W., Fort Worth, advises: "No such work contemplated."

### Roads, Streets and Paving

Large sums are being expended for roads, streets and paving in connection with Land Development operations. Details will be found under that classification.

#### Proposed Construction

Alabama—State Highway Comm., Montgomery, receives bids Jan. 12 for 3 roads and 4 bridges: Bibb County, 16.5 mi. road between Centerville and Wilton, 201,000 cu. yd. excavation, 73,900 lbs. reinforcing steel, 42,000 gravel and chert, 1 temporary bridge; Lowndes County, 2 bridges between Selma and Montgomery, 73,000 cu. yd. treated timber, 664 sq. yd. 1½-in. rock asphalt surfacing; Lamar County, 9.77 mi. between Vernon and Sulligent, 79,927 cu. yd. excavation and borrow, 18,181 lbs. reinforcing steel, 27,100 cu. yd. gravel surfacing, bridge over Bogue Creek; De Kalb County, 3.481 mi. between Valley Head and Mentone, 100,000 cu. yd. excav-

ation, 45,000 lbs. reinforcing steel, 49,200 cu. yd. gravel or chert surfacing, concrete overhead bridges over A. G. S. R. R.; plans on file; W. A. McCalla, State Highway Engr.

Ala., Opelika—City plans paving 8 additional blocks. Address City Clk.

Ala., Union Springs—State Highway Comm., Montgomery, receives bids Jan. 27 for 10.076 mi. road between Banks and Bullock County line toward Union Springs; 35,000 cu. yd. excavation, 18,343 lbs. reinforcing steel, 28,000 cu. yd. sand-clay surfacing, 10,000 sq. yd. mixing sand and clay, 255 lin. ft. treated timber bridges; plans on file; W. A. McCalla, State Highway Engr.

Ark., Little Rock—Comms. of Missouri-North Arkansas Highway Dist. plan repaving and widening 30 to 40 ft. Main St., 15th to 22d St.

Florida—State Road Dept., Tallahassee, receives bids Jan. 26 for 6 roads and 4 bridges: St. Lucie County, Road No. 4, 8.93 mi. plain cement concrete surface or asphaltic surfaces on Florida lime rock base, Fort Pierce to Martin County line; Martin County, Road No. 4, 8.48 mi. St. Lucie County line to Stuart; St. Johns County Road No. 4, 15.39 mi. building and surface treating, 8-in. Florida lime rock base, St. Augustine to Pellicers Creek; Palm Beach County, Road No. 4, 9.67 mi. Kelsey City to Jupiter, grade and construct drainage structures; Franklin County, Road No. 10, 17.43 mi. Carrabelle to East Point; Lake County, Road No. 2, 10.50 mi. Silver Lake Forks to Eustis, including 3 mi. hydraulic fill. Bridges: Brevard County, Road No. 4, 108-ft. reinforced concrete bridge across Turkey Creek; Martin County, Road No. 4, 131-ft. reinforced concrete overhead; Clay County, Road No. 3, 1600-ft. reinforced concrete bridge on precast concrete piles, across Doctors Inlet; 1400-ft. reinforced concrete bridge on precast concrete piles, across Black Creek; J. L. Cresap, State Highway Engr.

Fla., Bronson—Levy County Comms., W. R. Hodges, County Commr., contemplates ½ mi. concrete paving State Road 15.

Fla., Bushnell—Sumter County Comms., plan completing hard-surfaced roads throughout County. See Financial News—Bond Issues Proposed.

Fla., Cedar Key—Board of Bond Trustees receives bids Jan. 25 for paving. (See Machinery Wanted—Water Works, etc.)

Fla., Daytona Beach—City Comm. plans extending First Ave. from concrete bridge to ocean front.

Fla., Delray—See Miscellaneous Enterprises.

Fla., Delray—Chamber of Commerce interested in paving, curbing and laying sidewalks in residential sections.

Fla., Jacksonville—Duval County Comms., Frank Brown, Clk., receives bids Jan. 21 for 14-15 ft. roads: Wimauma to Lithia; Wimauma to Polk County line; Balm to Plant; Riverview to Millsport; Ruskin to Wimauma; Keyville to Welcome; Bell Shoals north to district line; Plant City-Picnic extension; Lithia to Polk County line; Riverview to Boyette; Gibsonton to Tamiami Trail; Gulf City Road; Balm to Picnic, Bloomingdale Ave. in Fifth Comms. Dist.; W. T. Williams, Chmn.

Fla., Lakeland—See Miscellaneous Construction.

Fla., Lake Stearns—City, J. M. Lee, Atty., plans street paving; cost \$105,000; walks, etc., \$5000. See Financial News—Bond Issues Proposed.

Fla., Orlando—Orange County Comm., L. L. Payne, Chmn., letting contracts for 2 roads: Goldenrod, from Cheney Highway to Oviedo road; Rouse road, from Cheney Highway to Seminole County.

Fla., Sanford—Seminole County Comms., V. E. Douglas, Clk., receives bids Jan. 27 for 35½ mi. road in county; 140,000 cu. yd. grading, 230,000 sq. yd. paving, 6 bridges and 12 concrete culverts; plans on file and from Fred T. Williams, Engr.

Fla., Tallahassee—City plans repaving Gaines St. See Bond Issues Proposed.

Fla., Tavares—Lake County Board of County Comms., M. V. Simpson, Chmn., receives bids Jan. 31 for approximately 7.5 mi. bituminous surface treatment paving on limestone base and 5 mi. graded road in Special Road and Bridge Dist. No. 3; H. S. Jaudon Engineering Co., Engr., Eustis, Fla.

Fla., Venice—Sarasota County Comms., Sarasota, granted permission Venice Co., Stanton Ennis, V.-P., to pave 4 roads totaling about 25 mi. in Venice section: Center, McKenny and East and West roads; Sarasota County Engineering Dept. supervising work; cost about \$900,000.

La., Bastrop—City plans letting contracts

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



soon for several additional blocks paving. Address City Clk.

La., Colfax—Louisiana Highway Comm., Baton Rouge, receives bids Jan. 20 to furnish gravel and build 9 mi. Bienville-Jonesboro Road, Bienville Parish, from Arcadia-Saline gravel road, Bienville, through Liberty Kill to Section A, under construction; plans on file; W. B. Robert, State Highway Engr.

La., Franklinton—Louisiana Highway Comm., Baton Rouge, receives bids Jan. 25 for 2 sections of roads, Washington Parish: 6.14 mi. gravel, Sun-Bogalusa-Mississippi State line highway, from Bogalusa to Varnado; 8.08 mi. gravel, Sun-Bogalusa-Mississippi State line highway, from Vernand, through Angle to Mississippi State line; plans on file; W. B. Robert, State Highway Engr.

La., Jena—State Highway Comm., Baton Rouge, receives bids Jan. 28 to build 7.424 mi. Jena-Nebo-Rogers Highway, La Salle Parish, State Proj. 556-A; W. B. Robert, State Highway Engr.

La., Kenner—Board of Aldermen, L. W. Deshauteurs, Clk., receives bids Jan. 11 for sidewalk paving; plans on file and from Henry A. Mentz, Engr., Hammond, La.\*

La., Many—Sabine Parish Police Jury, J. M. Abington, Sec., receives bids Jan. 17 for 2.29 mi. gravel, Mitchell-Oak Grove Road; plans on file.

La., Natchitoches—Louisiana Highway Comm., Baton Rouge, receives bids Jan. 18 for 1.484 mi. concrete pavement, curb or curb and gutter and storm-water drainage, Natchitoches-Shreveport Highway, Natchitoches Parish, from city limits, at gravel road leading to Powhatan to point near bridge over Cane River; plans on file; W. B. Robert, State Highway Engr.

Miss., Bay Springs—Jasper County Supvrs. Dist. No. 4 plans hard surfaced roads, improving public roads in dist., building bridges, etc., cost \$135,000; Supvrs. Dist. No. 3 plans hard surfaced roads, improve public roads in dist., bridges, etc., cost \$70,000. See Financial News—Bond Issues Proposed.

Miss., Ripley—Town, O. F. Street, Mayor, receives bids Jan. 11 to grade, gravel and drain Pine St.; 122 cu. yds. excavation, 110 cu. yd. gravel; plans from W. F. Henson, Clerk.

Mo., Mexico—City plans paving blocks on Washington, Hord, Jefferson, Clark and Calhoun Sts. Address City Clk.

N. C., Marshall—Board of Aldermen contemplate street improvement; cost \$65,000. See Financial News—Bond Issues Proposed.

Oklahoma—State Highway Comm., Oklahoma City, received low bids for 7 roads and 9 bridges: Logan County, 12.896 mi. grading and structures on State Highway No. 33, Blackburn & Rimby, \$35,555.66; Craig County, 9.93 mi. grading and drainage structures on Highway No. 6, Project 165-C, Golby & Epperson, \$86,522.62; Project 165-A and B, S. E. Gray, \$13,681.25 for A and \$13,257.19 for B; Stephens County, 17.289 mi. grading and structures on Project 187, J. A. Smith & Sons, D. \$23,476.48; E. \$21,489.65; G and F, \$35,065.52, and H, Stephens County Const. Co., \$75,224.59; Alfalfa County, Project 339, 6.504 mi. grading and structures, Project 339, 6.683 mi. grading and structures, Project 339, B. Albert Pike & Co., \$11,256.40; Grant County, Project 223, A, B, C and E, Dan Sweney, Blanchard, \$41,454.03; Project 223, D, McNeel & Wells, \$16,703.05; Canadian County, Project 164, 1.715 mi., Patterson & Patterson, Project 164-C, Roberts & Fisher; Osage and Washington Counties, Project 153, Hamilton Construction Co., Bartlesville, Project I and J, \$40,604.57; K, \$13,608.81; C, \$1284.53; D, \$31,111.98; E, \$9138.54; Major County, Project 363, A and B, 1.393 mi. grading and structures and bridge over Cimarron River on State Highway No. 8, A. R. Mackey, \$33,954.15; Sequoyah County, 11.312 mi. State Highway No. 1, Altman & Rogers, McAlester, A, \$32,622.95; B, \$25,847.20; Pushmataha County, 3 bridges on State Highway No. 10, Golby & Epperson, \$26,396.84; Jackson and Tillman Counties, bridge over North Fork of Red River, Woodward Construction Co., Woodward, \$17,490; Sequoyah County, 2 bridges on State Highway No. 1, Southwestern Construction Co., \$18,569; Kingfisher County, overhead crossing over Rock Island R. R., Geo. B. Rice, Kingfisher, \$13,982.70; Grady County, Project 348, concrete pile trestle and steel truss with approaches, Austin Bridge Co., 1813 Clarence St., Dallas, Texas; Cimarron County, bridge over Cimarron River, State Highway No. 38, A. R. Mackey, \$10,879.79.\*

Okl., Cordell—Washita County plans 71 miles hard-surfaced highway. See Financial News—Bond Issues Proposed.

Okl., Guymen—City plans 16,200 sq. yd.

grading, curbing and vertical fiber brick paving, Dist. No. 2; F. E. Devlin, Engr., Bitting Bldg., Wichita, Kansas.

Okl., Oklahoma City—City plans expending \$38,200 to widen, curb and sheet asphalt pave 9700 sq. yd. and \$31,700 for 6940 sq. yd. grading, curbing and sheet asphalt paving; B. M. Hart, Engr.

Okl., Stillwater—State Highway Comm., Oklahoma City, received low bid for road and 3 bridges in Payne County: 24 mi. grade and drain Highway No. 33, from end of Drumright paved highway across Payne County, Blackburn and Associates, Healdton, Okla., \$116,989; bridge over Cimarron River, on Highway No. 33 Pioneer Bridge Construction Co., 270 Glover Bldg., Kansas City, Mo., \$133,768; 2 bridges on same stretch, Epperson of Pryor, Okla., at \$32,132.\*

Okl., Woodward—City plans paving 8th St. with brick and cement; S. J. Dohrer, Clerk.

South Carolina—State Highway Dept., Columbia, receives bids Jan. 13 for 12 roads and 10 bridges: Georgetown County, 10,909 mi., Route 40, between Black River and Pee Dee River, 118,056 cu. yd. excavation, 28,780 cu. yd. sand-clay surfacing, 9427 lbs. reinforcing steel; three treated timber bridges, sixteen 15 ft. spans, 1710 lin ft. treated timber piles; Alken County, 6.178 mi., Route 121, from Wagener to Horsey's Bridge, 83,640 cu. yd. excavation, 15,201 cu. yd. sand-clay surfacing, 20,056 lbs. reinforcing steel; Fairfield County, 7.98 mi., Route 161, Salem Cross Roads to Survey Station 420; 101,804 cu. yd. excavation, 25,017 cu. yd. sand-clay surfacing, 46,944 lbs. reinforcing steel; Lexington County, 12.14 mi., Route 6, Edmund to Swansea, 98,627 cu. yd. excavation, 29,873 cu. yd. sand-clay surfacing, 11,773 lbs. reinforcing steel.

In Clarendon County, 8.521 mi., Routes 4 and 30, from end of Project 252 to Summertown, 142,295 cu. yd. excavation, 20,912 cu. yd. sand-clay surfacing, 2766 lbs. reinforcing steel; eight 15-ft. spans treated-timber bridge; Orangeburg County, 10,326 mi., Route 30, from end of Project 115-B to Pinkney's Landing, 105,902 cu. yd. excavation, 23,416 cu. yd. sand-clay surfacing, 25,137 lbs. reinforcing steel; three 22-ft. spans reinforced concrete bridge at Station 552, 20,097 lbs. reinforcing steel; Fairfield County, 3.28 mi., Route 22, end of Project 627-B, toward Great Falls, 51,768 cu. yd. excavation, 10,589 cu. yd. top-soil surfacing; triple 12x12-ft. and 10x12-ft. culverts, reinforced concrete bridge over Wateree Creek, 1035 cu. yd. excavation, 108,735 lbs. reinforcing steel; 6.77 mi., Route 22, Strothers to Salem Cross Roads, 91,959 cu. yd. excavation, 21,216 cu. yd. top-soil surfacing, 22,474 lbs. reinforcing steel.

In Lexington County, 3.143 mi., Route 121, 4500 cu. yd. excavation, 7365 cu. yd. sand-clay surfacing; Edgefield County, reinforced concrete and steel bridge over Turkey Creek, Route 21; substructure, 386.33 cu. yd. class-A concrete, 54,233 cu. yd. reinforcing steel, 629 cu. yd. excavation; superstructure 148,000 lbs. structural steel, 60.9 cu. yd. concrete, 9595 lbs. reinforcing steel; Kershaw County, treated timber and steel overhead bridge on Route 50, near Blaney, six 21-ft spans, one 35-ft. span, 15,900 lbs. structural steel; Fairfield County, 2 mi., Route 22, from city limits of Winnsboro to Project 627-B, 24,191 cu. yd. excavation 6335 cu. yd. top-soil surfacing; Oconee County, 6.972 mi., Route 2, from end of pavement near Seneca to Walhalla, 37,236 cu. yd. excavation, 73,634 sq. yd. plain concrete paving, or 73,634 sq. yd. combination cement concrete header curb and base course, with 67,497 sq. yd. asphaltic concrete surfacing, 4866 lbs. reinforcing steel; plans on file; Ben M. Sawyer, Ch. Highway Commr.

Tenn., Dresden—Dept. of Highways and Public Works, Nashville, plans improving 16 mi. Greenfield-Martin road via Sharon, Weakley County.

Tenn., Greeneville—Greene County and State Dept. of Highways and Public Works, Nashville, plan surfacing and rebuilding portion Lone Pipe Trail, cost \$50,000.

Tenn., Johnson City—City plans paving six streets. Address The Mayor.

Tenn., Selmer—McNairy County and State Dept. of Highways and Public Works, Nashville, plan 15 mi. Selmer-Chester County road via Bethel Springs during Spring of 1927.

Tenn., South Pittsburg—City, Alan S. Kelly, Mayor, plans street paving. See Financial News—Bond Issues Proposed.

Texas—State Highway Comm., Eugene T. Smith, Chmn., Austin, received low bids for 2 roads: Ellis County, 5.4 mi. grading and preparation base on new alignment and surfacing 18-ft. wide with 5 gal. per sq. yd. asphalt, State Highway No. 68, between Midlothian and Dallas County line; Frank Purvis, 1501 W. Myrtle St., Fort Worth, \$15,941;

Falls County, 7.65 mi. gravel resurfacing, Highway No. 44, Rosebud north, Hannah Construction Co., Waco, \$16,830.\*

Tex., Abilene—City, Charles E. Coombes, Mayor, plans street paving, cost \$150,000. See Financial News—Bond Issues Proposed.

Tex., Archer City—City plans paving streets leading from square. Address City Clk.

Tex., Archer City—Archer County Commrs. Court plans road building, cost \$150,000. See Financial News—Bond Issues Proposed.

Tex., Beaumont—City, Ollie J. Bloyd, Mgr., plans 15 blocks permanent paving, cost \$50,000; R. C. Black, City Engr.

Tex., Brownsville—Cameron County, Oscar C. Dancy, County Judge, plans 180 mi. hard-paved highways and laterals graded, graveled, etc.; W. O. Washington, County Engr. See Financial News—Bond Issues Proposed.\*

Tex., Burnet—Burnet County plans building roads, north, east, south and west, cost \$700,000. Address County Commrs. See Financial News—Bond Issues Proposed.

Tex., Canyon—Randall County, Rector Lester, County Judge, plans paving highway through Canyon to county line and southwest from Amarillo over Abo Pass Highway; cost \$250,000. See Financial News—Bond Issues Proposed.\*

Tex., Fredericksburg—Gillespie County plans road building. Address County Commrs. See Financial News—Bond Issues Proposed.

Tex., Hallettsville—Lavaca County Commrs. Court appropriated \$125,732.36 for 10 mi. asphalt-surfaced highway, Road Dist. No. 3, Moulton, from Fayette County line to Henkhaus; W. H. Koether, County Engr., Moulton.

Tex., Houston—Harris County, Harry Washburn, County Auditor, plans receiving bids within 30 days for 4 roads: Clinton, Market St., Navigation Blvd. and La Porte Road; Chester H. Bryan, County Judge.

Tex., Houston—City Council received low bids for graveling 40 streets; J. M. Griswold, 3840 Polk St., at \$36,727, for Regan, Bradley, Omar and other streets and Smith, Storey and James, at \$40,649, for other streets, including Jarrel and Quitman.

Tex., Houston—Harris County, Chester H. Bryan, County Judge, receives bids Jan. 10 to improve 2 roads: Resurface Seabrook loop; rebuild Manchester Blvd.; plans from Howe & Wise, County Engrs., 816 First National Bank Bldg.; H. L. Washburn, County Auditor.

Tex., La Feria—Paving—City, J. A. Raymond, Sec., plans permanent paving, cost \$50,000. See Financial News—Bond Issues Proposed.\*

Tex., Paducah—Cottle County plans improving highways. Address Jas. L. Whatley, Paducah.

Tex., Seguin—Guadalupe County Commrs., J. B. Williams, County Judge, plans road building. See Financial News—Bond Issues Proposed.

Virginia—State Highway Comm., H. G. Shirley, Chmn., Richmond, received low bids for 7 bridges and 3 road projects: 10 mi. concrete road, from Dinwiddie courthouse to the Nottoway River, Gregory & Weisiger, Inc., at \$295,007.10; 3 mi. concrete road, Accomman County, near Keller, Old Line Construction Co., Chestertown, Md., at \$88,522.91; 1.7 mi. road at Victoria, Central Construction Co., Victoria, \$13,358.85; 3 bridges over Wolf creek and one over Hunting Creek, H. A. Marshall, 1106 Campbell Ave. S. W., and M. S. Hudgins, 23 Second St. South, Roanoke, at \$45,694.25; Dinwiddie bridge, Hagedorn Construction Co., 222 E. Market St., Greensboro, N. C., \$33,773.45; bridge over Waqua Creek, J. S. Bowers, Whitesville, N. C., \$13,204.29; bridge over Wallen's Creek, Jenkins Construction Co., \$6368.95.\*

W. Va., Huntington—City Commrs., H. H. Fielder, Clk., plans grading, curbing, paving and improving Hughes St. and Jackson Ave.

W. Va., Parkersburg—City, W. E. Stout, Mayor, plans street paving in nearly every section; cost about \$400,000. See Financial News—Bond Issues Proposed.

W. Va., Pineville—Wyoming County plans improving roads in Baileyville Dist., cost \$60,000; also improving roads in Barkers Ridge Dist., cost \$325,000; A. B. Shannon, Engr. See Financial News—Bond Issues Proposed.

W. Va., Wheeling—City, Harvey L. Kirk, Mgr., may receive bids to pave Valley View St., Pleasanton.

#### Contracts Awarded

Ala., Brighton, Bessemer—City let contract to Robert L. Totten Co., Inc., Brown-Marx Bldg., Birmingham, to pave various streets.

Ark., El Dorado—City let contract to Phoe-

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nix Construction Co., Homer, La., at \$52,142, for about 14 blocks paving, Improvement Dist. No. 23.

Ark., Fort Smith—City, J. H. Parker, Mayor, let contract to B. F. Rogers for 2500 sq. ft. sidewalks; W. H. Evans, City Engr.

Fla., Orlando—Orange County Comms. let contracts for 9 roads, totaling 35.26 mi., subject to deeding complete rights of way: Sec. A, 8.1 mi., from Apopka through Rock Springs to Lake County line, Southland Construction Co.; Sec. B, 6.65 mi., from Winter Garden through Windemere to Hiwassee Road, Cox & Bryson, 311 Smith Bldg.; Sec. C, 4 mi., Bear Head Road from Conway asphalt road around Big Lake Conway to Dixie Highway, Langston Construction Co., 110 E. Central St.; Sec. D, 4.42 mi., Gatlin and Michigan Ave., Cox & Bryson; Sec. E, 3.65 mi., from city limits on South St., etc., Cox & Bryson; Sec. F, 2.62 mi., from Cheney Highway to Winter Park, also from East Winter Park Road to Lake Corinne, Langston Construction Co.; Sec. G, 5.82 mi., Goldenrod Road, from Cheney Highway north to Seminole County line, also Rouse road from Cheney Highway to Seminole County line, Langston Construction Co., all local contractors.\*

Fla., Stuart—City Comn. let contract to Leslie A. De Vor Construction Co., at \$22,000, for Palm Beach Road, connecting Dixie Highway with St. Lucie Estates; to Lawrence Construction Co. at \$74,040 for paving in Hillcrest Subdivision.

Fla., Stuart—City Comn. let contract to Rollins Co., Stuart and Miami, at \$227,000, for construction cement street paving, curbing, gutters and sidewalks.\*

Georgia—State Highway Dept., East Point, let contracts for 2 roads and 3 bridges: Liberty County, overhead bridge and approaches on Savannah-Darien road, Riceboro, William P. McDonald Construction Co., Lakeland, \$32,929; Columbia County, 2.963 mi. graded Applin-Lincolnton highway to Lincolnton County line, M. R. Woodall Co., Inc., Walton Bldg., Atlanta, \$14,287; Thomas County, 8.439 mi. concrete Camilla-Thomas road, Davis Construction Co., Walton Bldg., Atlanta, \$195,896; Jefferson County, 2 bridges on Louisville-Swainsboro road, at Ogeechee River, George A. Thomason & Co., Macon, \$66,159.

Ga., Thomasville—Thomas County Comms. let contract for 8.5 mi. Dixie Highway, between Thomasville and Mitchell County line, to Davis Construction Co., Walton Bldg., Atlanta, at \$96,855.54.\*

La., Bastrop—City let contract to Williams & Young for concrete paving on 8 additional blocks.

La., Ponchatoula—Tangipahoa Parish School Board let contract to H. J. Gabriel, Ponchatoula, for concrete sidewalks around Ponchatoula High School.

Miss., Laurel—Jones County Board of Suprs. let contract to Bobbie Construction Co., Laurel, at \$10,000 to widen Jones County Bay Springs Highway.

Okla., Seminole—Contract for paving in District No. 1 awarded to Wark-Beekman & Brooks, 1301 E. Ninth St., Oklahoma City, at \$34,981.

Tenn., Trenton—Dept. of Highways and Public Works, Nashville, let contract to Callaway-Fisher Construction Co. to grade highway from Eatons Cross Roads to Loudon County line.

Tex., Archer City—City let contract to Stuckey Construction Co., Wichita Falls, to pave streets around public square with reinforced concrete.

Tex., Cotulla—City, J. W. Lacy, Mayor, let contract to Lone Star Construction Co., 415 Alamo National Bank Bldg., San Antonio, at \$60,000 for 29,000 yds. asphaltic paving.

Tex., Eastland—City Comn. let contract to West Texas Construction Co., Cotton Exchange Bldg., of Fort Worth and Abilene, to pave with brick 52 blocks approximately 3.5 mi.\*

Tex., Galveston—City Comms. let contract to H. J. Hetkes, Galveston, at \$84,391.12, to pave parts Twenty-fourth St., Avenues E, H and I, Twenty-sixth St.

W. Va., Pineville—Wyoming County Comms. let contract to McArthur & Hood, Pineville, at \$85,313, for grading Clearfork Road.

### Sewer Construction

Large sums are being expended for sewage facilities in connection with Land Development operations. Details will be found under that classification.

Ala., Bessemer—City plans voting on bonds for sewers. Address The Mayor.

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Ark., Jonesboro—City reported install sanitary storm sewer system; Lee & Cobb, Engrs.

Fla., Cedar Key—Board of Bond Trustees receives bids Jan. 25 for sewer improvements, etc. (See Machinery Wanted—Water Works, Sewers, etc.)

Fla., Stuart—City let contract to Lawrence Construction Co., at \$63,000, for storm and sanitary sewers.\*

Fla., Tallahassee—City, B. H. Bridges, Clk., voted \$50,000 storm drainage bonds; \$40,000 bonds for extending sewerage system.\*

Fla., Winter Park—City, C. Fred Ward, Mayor, receives bids Feb. 9 to furnish material and construct sanitary sewer system. (See Machinery Wanted—Sewers.)

La., Delhi—Town, C. E. Wiggins, Mayor, is receiving bids for furnishing material and constructing 1700 ft. of 8-in. sanitary sewers and 1000 ft. of cast iron mains; Chas. D. Evans, Consol. Engr., Levy Bldg., Shreveport.

La., Mansfield—City reported install sewer system; J. S. Ament, City Engr.

La., Vivian—City contemplates construction of complete sewerage system and disposal plant; may vote on bonds. Address The Mayor.\*

Miss., McComb—See Water Works.

Mo., Springfield—Ralph McSweeney has contract at \$24,206 for sewer extensions; 18,483 ft. of 8-in. vitrified clay pipe; 1774 ft. of 10-in. pipe; S. R. Fisher, City Engr.\*

N. C., Thomasville—A. H. Guion & Co., N. Broad St., Gastonia, has contract for sewer extension and filter plant; install concrete filter plant, cement sewer pipe; construction to begin Jan. 15; Wm. C. Olsen, Engr., Raleigh Bldg. & Loan Bldg., Raleigh.\*

N. C., Wilmington—City reported to construct line to replace Jacob's Run, cost \$50,000. Address The Mayor.

Okla., El Reno—City votes Jan. 28 on \$10,000 sewer bonds. Address The Mayor.\*

Tex., Abilene—City voted \$50,000 sewer bonds; O. K. Hobbs, City Engr.; Chas. E. Coombes, Mayor.\*

Tex., Coolee—City defeated bond issue. See Financial News—Bond Issues Proposed.\*

Tex., Lewisville—City defeated sewer bonds. See Financial News—Bond Issues Proposed.

Tex., Lubbock—City reported receives bids Jan. 10 for sewer improvements; M. R. Smith, Jr., Engr.

Tenn., Paris—City, John H. Arnett, Chmn., Board of Public Works, reported plans sanitary sewerage on Wynn, Hardy, Bogg and Rison Sts.

Tex., Fort Worth—Southwell & Abbott, 2216 W. Seventh St., reported have contract at \$12,015 for storm sewer work on May St.; J. M. Purvis, 112½ W. Ninth St., for storm sewer.

Tex., San Antonio—City will probably install sanitary sewers in Lakeview Addition. Address The Mayor.

Tex., San Saba—See Water Works.

Tex., Taylor—City voted against purchase of Taylor Sanitary Co.'s plant. Address The Mayor.

Va., Norfolk—B. F. Round, 12 Shell Rd., Portsmouth, low bidder for laying cast iron sewer force main in Monroe Place and Jamestown Crescent.

Va., Richmond—Westhampton Section, lately noted voted bonds, will soon have plans prepared by Allen J. Saville, Inc., Engr., for laying sewers and water system at Westhampton; cost about \$300,000.

W. Va., Parkersburg—City plans voting in Feb. on sewer and water bonds. See Financial News—Bond Issues Proposed.

W. Va., Wheeling—City let contract to Elm Grove Building Material Co., Elm Grove, Wheeling, at \$10,743, for extension of sewer system; 550 ft. 72-in. reinforced concrete culvert pipe; H. L. Arbens, Engr.\*

### Telephone Systems

Ala., Mobile—Southern Bell Telephone Co., Hugh M. Stanfill, Mgr., reported has tentative plans for construction of new central office adjoining present building on St. Francis St., 3-story, with foundation to accommodate several more stories when needed; will install additional switchboard facilities and associated equipment connecting with equipment in old building; lay new cables as well as overhead wire for city, suburbs and outlying districts; estimated cost \$500,000.\*

Fla., Daytona Beach—Southern Bell Telephone & Telegraph Co., N. Ridgewood Ave., let contract to H. U. Whipple, 563 Magnolia Ave., for storage garage and warehouse, concrete and tile.

Ga., Atlanta—Southern Bell Telephone & Telegraph Co., Hurt Bldg., contemplates ex-

pending approximately \$29,700,000 for replacements and construction during year of 1927; Company operates in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.\*

Ky., Ashland—Consolidation of Ashland Telephone Co. and Catlettsburg Telephone Co., under ownership of Fayette Home Telephone Co. of Lexington; J. D. Van Hooser of Ashland will be manager of consolidated companies.

Miss., Lexington—Cumberland Telephone and Telegraph Co., G. W. Gunter, local Mgr., reported will expend approximately \$23,000 on improvements to system.

Okla., Oklahoma City—L. R. Timlin, company Archt., advises regarding erection of administration and equipment building in this city for Southwestern Bell Telephone Co., 1010 Pine St., St. Louis, Mo.: "Bids for this building will be opened about April 15 and bids for excavation opened about first of Feb."\*

Tenn., Memphis—Southern Bell Telephone & Telegraph Co., Frank L. Fournay, local Mgr., main office Atlanta, Ga., reported plans erecting \$100,000 exchange building.

### Textile Mills

Ala., Blumountain—American Net and Twine Co., Anniston, reported plans \$200,000 addition to plant; all machinery and special equipment has been purchased; contract will probably be let to local firm; construction to begin March 27; Robt. Barbour, 55 Fulton St., New York, is president of company.

Ark., Magnolia—T. S. Grayson advises: "Have not done anything about cotton mill except raise about \$300,000; have not elected Board of Directors yet."

N. C., Burlington—Holt, Love & Holt reported to install 46 additional looms.

N. C., Durham—Golden Belt Mfg. Co., G. W. Hundley, Pres., E. Main St., will erect fireproof plant, install 25 full fashioned knitting machines; increase capacity to 90,000 doz. pairs per year.

N. C., Kings Mountain—Park Yarn Mills, C. W. Johnston, Pres., Charlotte, reported to convert coarse yarn mill to fine combed mill; install 15,000 spindles.

S. C., Spartanburg—Drayton Mills reported to erect additional weave room and install 400 looms.

S. C., Woodruff—Mills Mill No. 2 reported to equip plant for weaving print cloth and pajama check.

Tex., Harlingen—Valley Cotton Mill Co., P. M. Keller, Mgr., reported to soon begin construction of \$300,000 cotton mill on 10-acre site.\*

### Water Works

Large sums are being expended for waterworks in connection with Land Development operations. Details will be found under that classification.

Ala., York—City, H. L. Hoot, Mayor, will expend \$50,000 for new water works system; install 7000 ft. 6-in. cast-iron pipe mains; 20,000 ft. 2-in. supply mains; filtration plant, pumps, reservoir and tower, electric-driven pumps, washing machines; Robert L. Totten, Inc., Engrs., Brown-Marx Bldg., Birmingham; Pittsburgh-Des Moines Steel Co., Praetorian Bldg., Dallas, Tex., has general contract at \$50,000; Fairbanks, Morse & Co., 1000 St. Charles St., New Orleans, La., will furnish pumping machinery; International Filter Co., 333 W. 25th Place, Chicago, Ill., filter plant; Wallace & Tierman Co., Newark, N. J., chlorinator.\*

Fla., Cedar Key—Board of Bond Trustees receives bids Jan. 25 for water works, sewer and pavement improvements, for which \$150,000 bonds are available. (See Machinery Wanted—Water Works, etc.)

Fla., Lake Stearns—City plans voting on bonds for water works and parks. See Financial News—Bond Issues Proposed.

Fla., Tallahassee—City opens bids Jan. 11 for deep-well pump; B. H. Bridges, City Clk.

Fla., Tallahassee—City, B. H. Bridges, Clk., voted \$79,000 water works bonds.\*

La., Olla—City reported soon call for bids for water works and sewers; \$22,000 available; F. R. Joseph, Consol. Engr., Glenmora.



Miss., McComb—City, B. E. Butler, Clk., reported plans installing water mains and constructing sewage-disposal plant; Harry A. Mentz, Engr., Hammond, La.; Sullivan, Long & Haggerty, Contrs., Bessemer, Ala.

Mo., Mound City—City reported plans water works system, including pump house. Henningson Engineering Co., Engr., National Bank Bldg., Omaha, Neb.

Mo., Oregon—City reported let contract to J. O'Neal, Leavenworth, Kan., for 8000 ft. cast-iron mains.

Mo., Seymour—Sewell Well Co., 1627 Locust Blvd., St. Louis, reported has contract drilling deep well for water works.\*

Mo., St. Louis—City, L. A. Day, Water Commr., opens bids about April 1 for \$560,000 improvement to Bissell's Point water works, including concrete covers for old basins.\*

Tenn., Chattanooga—City Water Co., A. F. Porzelius, Supt., advises relining of reservoir Missionary Ridge will be handled by own construction forces; all material has been purchased.\*

Tenn., Knoxville—U. S. Cast Iron Pipe & Foundry Co., American Trust Bldg., Birmingham, Ala., has contract for various sizes of pipe for water works.\*

Tex., Abilene—City voted \$600,000 bonds for water works improvements; O. K. Hobbs, City Engr.; Chas. E. Coombes, Mayor.\*

Tex., Beaumont—City will probably have survey of proposed reservoir site on Neches River at Rockland completed about March 15; C. S. Clark, State Board of Water Engrs., Austin.

Tex., Childress—City receives bids Jan. 12 for water works improvements, earthen storage reservoir, pipe line, improvements to water treatment plant, 14,000 ft. of 12 in. Class A and B cast-iron pipe, 350 ft. of 20 in. Class A cast-iron pipe; 1,525,000 gal. concrete sedimentation basin and alterations to present piping plant; Frank F. DuBose, Const. Engr. See Machinery Wanted—Water Works.

Tex., Fayetteville—City plans voting on \$35,000 bonds for constructing water works. Address The Mayor.

Tex., Happy—Chamber of Commerce reported interested in securing paving, water and gas for town.

Tex., Houston—City Council approved plans for 3 wells, pipes, well houses and other improvements needed for 15,000,000 gal. water reservoir near Sabine Street bridge; cost \$105,000; will soon call for bids.\*

Tex., Levelland—City voted \$50,000 bonds for water works; Hawley & Roberts, Engrs., Box 1115, Lubbock.

Tex., Lewisville—City voted \$62,000 bonds for water works. Address The Mayor.\*

Tex., San Saba—City votes Jan. 18 on bonds for water works and sewers. See Financial News—Bond Issues Proposed.

W. Va., Bridgeport—American Cast Iron Pipe Co., Birmingham, Ala., has contract for supplying pipe for line to be installed along National Pike from Lincoln Ave. to Brookside.

W. Va., Parkersburg—See Sewer Construction.

### Woodworking Plants

Ark., Calico Rock—J. T. Karnes of Marshall leased site; will operate stave mill.

Ga., Douglas—W. H. Bone, Jr., contemplates establishing plant to manufacture mop and broom handles. (See Machinery Wanted—Woodworking Machinery.)

La., Bogalusa—Furniture—H. B. White of Bogalusa, Carl A. Tindall of Newcastle, Ind., and associates plan organizing \$75,000 company to manufacture furniture.

Miss., Laurel—Eastman-Gardiner Hardwood Co., J. W. Bailey, V. Pres. and Mgr., advises regarding rebuilding planing mill and dimension plant: "The character of the plant will probably be changed a little when it is rebuilt; will produce practically same amount shooks that were being made at time of fire; of finished product, with exception of box this will include hardwood dimension and trim, also machines for resawing and dressing lumber."

N. C., Hickory—The Southern Desk Co., capital \$500,000, incorporated; G. F. Ivey, L. S. Ivey.

N. C., High Point—V. A. J. Idol, Vice-Pres., Commercial Natl. Bank, reported acquired plant of Ideal Table Co. on Park St.; plans not completed.

Tex., Houston—The Houston Ready Cut House Co., J. H. Suttles, Pres., 4445 Walker Ave., has permit for first unit of new factory and mill at Polk and Milby Sts.; 172x210 ft., heavy mill construction, with stucco ex-

terior walls, trussless roof; estimated cost \$30,000.

Va., Rockymount—Bald Knob Furniture Co., increased capital, \$1,500,000 to \$3,000,000; contemplates building additional manufacturing unit to be known as factory No. 2; brick and concrete, concrete floors; will install woodworking machinery, generating plant, boilers, etc.

## FIRE DAMAGE

Ala., Cloverdale—Cloverdale Pharmacy and Hill Grocery Co.; loss \$10,000.

Ala., Pritchard—Buildings owned by Dr. W. T. Whittedge; loss \$50,000.

Ark., Tyronza—Power plant owned by T. C. Goodrich; loss \$20,000.

Fla., St. Augustine—Magnolia Hotel; address the Proprietor.

Fla., Tallahassee—Mrs. D. F. Chittenden's residence.

Fla., West Palm Beach—Lake Park Hotel, Narcissus Ave. between Clematis and First Sts.; Frank Hirsh, Mgr.; loss \$20,000.

Ga., Davisboro—O. N. Ruben dry goods store and 5 other stores; loss \$70,000.

Ga., Louisville—Mrs. Lizzie McNeely's residence near Louisville.

Ky., Lexington—Jefferson Davis School building on S. Limestone St., J. O. H. Simrall, Sec., Board of Education; loss \$50,000.

Ky., Louisville—Warehouse of Bensinger Furniture & Carpet Co., 35 State St., New Albany; loss \$30,000.

Ky., Louisville—Mattress plant of Louisville Bedding Co., Main St., east of Preston; loss \$150,000.

La., Denham Springs—Two meat markets, one owned by R. L. Williams, other by R. W. Cockerham, Baton Rouge, and operated by Ed Duddy.

Ky., Marion—Masonic Temple annex, occupied by D. B. Moore, grocer.

La., New Orleans—Residences of Eddie Stiles, John Zuvich and Geo. Mosely, 2100 block Bartholomew St.; loss \$12,500.

La., Shreveport—Building occupied by J. P. Clancy Welding Co., E. L. Edwards Auto Storage Co. and the Ellicott Bros.; loss \$10,000; owned by George Freeman, 1743 Buckner St.

Md., Easton—Carroll McDaniel's store and residence at Klondyke, 5 miles from Easton; loss \$6000.

Md., Hagerstown—Building owned by Clarence Keedy, occupied by Lafayette Inn, Mrs. Anna Kanaba, Prop.

Md., Ruxton, Baltimore—T. Nelson Strother's residence; loss \$15,000.

Md., St. Michaels—Two buildings owned by Capt. E. Ney Dodson.

Md., St. Michaels—Residences of J. S. Parker and Samuel Jones.

Miss., Laurel—Eastman-Gardiner Hardwood Co.'s dimension plant and planing mill; loss \$100,000.

Miss., Yazoo City—Stanley Hall, building

at Yazoo County Agricultural High School at Benton; loss \$9000.

Mo., Jefferson City—Hickey Paint & Varnish Co., at 215 Jefferson St.; loss \$14,000.

Mo., Kansas City—Evanston Apartment House, loss \$15,000; address the Prop.

Mo., Kansas City—National Block Building, Ninth and Main Sts., owned by W. H. Hall and occupied by Rochester Clothing Co., M. Daniels Jewelry Co., Haas Cigar Store, Junction Hotel, Anderton Printing & Rubber Stamp Co., etc.; loss \$60,000.

Mo., St. Louis—Alex. Tzinberg's dry goods store, 2029 S. Broadway; loss \$10,000.

N. C., Denver—Two stores of R. E. Proctor.

N. C., Mount Airy—Brannock-Midkiff Hardware Co., L. R. Martin Grocery Co., Belton Grocery Co., Busy Bee Cafe; loss \$165,000.

Okla., Ponca City—Gasoline plant of Gypsy Oil Co. near Three Sands.

Okla., Sand Springs—J. A. Freedman 5 and 10 cent store, Patton grocery; loss \$65,000.

Okla., Seminole—Commercial Hotel, Union Clothing Co. building, Wacker's Variety Store, Republic Supply Co. building, M. System grocery; loss \$200,000.

S. C., Liberty—Gary's Store, loss \$30,000; building of Franklin Guano Co., loss \$5,000.

S. C., Charleston—Sash and door factory of L. Wetherhorn & Son, 7 Smith St., and adjoining property; loss \$40,000.

S. C., Laurens—Residence of Dr. W. Hubert Fanning, Prop., Fanning Drug Co.

S. C., Sumter—Buttercup Ice Cream Co.'s plant on S. Harvin St.; loss \$12,000.

S. C., Waterloo—Harris Springs Hotel, near Waterloo, operated by Purvis Realty Co., C. A. Purvis, Mgr.

Tenn., Chattanooga—Residence, Lookout Mountain, occupied by Dr. H. H. Gregg, Pastor, Lookout Presbyterian Church; owned by Mrs. N. Thayer Montague, 852 Oak St.; loss \$35,000.

Tenn., Dyersburg—G. E. Scott Lumber Co.'s office buildings; loss \$26,000.

Tenn., Hohenwald—Scott Hotel, Duncan Cash dry goods store, H. L. Rasbury's merchandise, Bell grocery, etc.; loss \$50,000.

Tenn., Nashville—Residence, Woodmont Blvd., near Harding Road, occupied by P. V. Jackson and O. E. Baker.

Tex., Crockett—First Presbyterian Church; loss \$15,000. Address The Pastor.

Tex., Hagerman—Carver grocery store, Hagerman Hardware Co., J. R. Franks' grocery; loss \$30,000.

Tex., Houston—Mount Corinth Baptist Church, Colored, 924 Schwartz St., Rev. Arthur Hubbard, Pastor.

Tex., Huntsville—Building No. 2, Eastham State Farm. Address The Supt.

Tex., Mineral Wells—J. C. Llewellyn Lumber Co.'s buildings and stock; loss \$40,000.

Tex., O'Donnell—State Theater, White House cafe, C. L. Tomlinson's barber shop and J. A. Rodgers' confectionery; loss \$15,000.

Tex., Valley Mills—Crow Hotel block, owned by R. V. English, Snyder; loss \$50,000.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### Association and Fraternal

Ark., Sheridan—American Legion plans gymnasium and banquet hall.

Ga., Atlanta—Shrine Mosque Builders, Chas. E. Wilson, Pres., completing plans for \$1,000,000 mosque, Peachtree and Kimble Sts., for Yaarah Temple, A. A. O. N. M. S.; plan to start work about Feb. 1; Saracenic type, reinforced concrete and steel, brick and stone exterior, stucco and colored wall tile interior; auditorium with stage 60 ft. deep and proscenium arch 120 ft. wide, banquet hall seat 1000, lounge and club rooms, stores, etc.; Marye, Alger & Alger, Archts., Walton Bldg., Atlanta; Edw. L. Tilton, Const. Archt., 141 E. 45th St., New York.\*

La., Monroe—Leonides Barkdull Faulk Post, American Legion, Dr. P. M. Gayle, Chmn. Bldg. Comm., contemplates building.\*

La., New Orleans—Knights of Pythias, Masonic Bldg., selected Diboll & Owen, Interstate Bank Bldg., as architect for alterations

and additions to brick building, Carondelet St. near Howard Ave., for lodge quarters; 4 stores and arcade on ground floor, auditorium and ballroom on second, lodge rooms on third, gymnasium and clubrooms in basement.

Md., Baltimore—Young Men's Hebrew Assn., Aaron Straus, Chmn. Bldg. Comm., 1 S. Howard St., purchased site, Monument St., near Howard, for \$500,000 building.\*

Miss., Tylertown—Lodge No. 392, A. F. & A. M., erect temple.

N. C., Charlotte—Hornets' Nest Post, American Legion, J. K. Slear Chmn., Home Comm., 505 N. Pine St., plans building or leasing structure for quarters.

Okla., Blackwell—Noma Grange No. 173, care District No. 54 school, erect 30x60-ft. hollow tile building.

Tex., Mercedes—American Legion considers building.

Tex., Palestine—Ancient Free and Accepted

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Masons purchased Hodges Bldg., Magnolia and Oak Sts.; will erect third story for lodge quarters.

Va., New Market—Hines Memorial Pythian Home of Virginia, Walter Sibert, Sec. Board of Governors, 31-32 Nusbaum Bldg., Norfolk, receives bids Jan. 15 for repairing Colonial mansion on site and erecting additional buildings; cost \$25,000; 3 stories, 30x50 ft., brick walls, reinforced concrete floor construction, hardwood and composition floors, concrete and stone foundation, steam heat, city electric service; J. R. Mims, Archt., Luray; plans from Mr. Sibert.\*

### Bank and Office

Ala., Anniston—Commercial National Bank, C. R. Bell, remodel third floor of building for offices; install elevator.

Ala., Birmingham—M. S. H. Realty Co., John D. Scruggs, 116 N. 21st St., member, purchased property, Second Ave. and 21st St.; reported contemplating 12-story building.

Fla., Tampa—M. Leo Elliott, Inc., 706 Franklin St., drawing plans for \$1,500,000 office building; advises details not ready.

La., Amite—Amite Bank & Trust Co. probably have plans ready in few days for bids on reinforced concrete and brick bank and office building; cost \$90,000, 2 stories, cast stone trim, plastered interior, marble and tile floors, steel sash, plate glass window fronts, steam heat, fixtures, vaults; Sam Stone, Jr. & Co., Archts., Masonic Temple Bldg., New Orleans.\*

La., New Orleans—Levert Land Co., 423 Carondelet St., alter 3-story brick building, 821 Perdido St.; C. E. Moroney, Jr., Archt., 2843 Baronne St.; bids in.

La., New Orleans—Mutual Building & Homestead Assn. alter 2-story brick building, 531 Carondelet St.; J. M. Werling, Contr., 2909 St. Bernard Ave., receiving sub-bids on plastering, composition roofing, painting, tile and factory work.

Md., Baltimore—Samuel C. Applefeld, 2301 Toga Pl., receiving bids at office Stanislaus Russell, Archt., 11 E. Lexington St., to be opened latter part of Jan., for \$80,000 office building, 221 W. Baltimore St.; 5 stores and basement, 17x97.6 ft., reinforced concrete.\*

Mo., St. Louis—Bremen Bank, H. L. Prange, Vice-Pres., 3600 N. Broadway, erect \$300,000 bank building, Broadway and Malinsbredit St.; 1 story, 60x155 ft., brick, stone and steel; Wedemeyer & Nelson, Archts., Wainwright Bldg.; ready for bids about January 10.

Mo., St. Louis—Southampton Investment & Building Co. announced sale to client of site, S. Kingshighway Blvd. and Chippewa St.; \$150,000 office building planned.

Okla., Oklahoma City—Capitol State Bank erect \$25,000 brick and stone building; Moore & Wemyss-Smith, Archts., Continental Bldg.; bids in.

Okla., Oklahoma City—Southwestern Bell Telephone Co. probably have plans out March 15 for \$500,000 addition to office building, bids to be opened April 1; 9 stories; I. R. Timlin, Archt., Boatmen's Bank Bldg., St. Louis, Mo.

Okla., Tulsa—Tulsa Medical Society, Doctor C. W. Day, member, probably take bids during Feb. for red brick or white stone Medical Arts Bldg., Sixth St. and Boulder Ave.; cost \$800,000, steel and reinforced concrete; A. M. Atkinson, Archt., 218 Mid-Continent Bldg.\*

Tex., Dallas—Rosser J. Coke, 5803 Gaston St., erect fireproof building, St. Paul St., near Ross Ave.; 4 stories with foundation for 15-story structure; first floor to be leased to Tobian Garage; cotton offices above; L. R. Whitson, Archt., Santa Fe Bldg.; work start about Jan. 15.

Tex., La Feria—First National Bank, D. W. Sigler, Asst. Cashier, has low bid for \$20,000 building from W. A. Strickland; tile and stucco, 1 story and balcony, 25x95 ft., cement and tile floors, battleship linoleum, steel sash, skylights, Barrett 20-year roof; furnishings, equipment, etc., \$8000; E. Floyd Redding, Archt., Denver, Col. (See Machinery Wanted.)

Tex., San Antonio—H. Lee Ransom, 224 E. Houston St., and others purchased property, Commerce and S. Alamo Sts.; probably add additional story to 3-story buildings on site, remodel interiors, etc; cost about \$100,000.

Tex., San Antonio—San Antonio Realty Board, 116 Gunter Bldg., reported planning office building; probably 7 stories.

Tex., Waco—Waco Development Co., Asher Sanger, Pres., 1806 Washington Ave., probably call for bids about Jan. 20 on 12-story mezzanine and basement office building, Austin Ave. and Fourth St.; cost \$700,000; reinforced concrete, brick, stone and terra cotta,

fireproof, 100x165 ft.; 2 elevators; Milton W. Scott & Co., Archts., 412½ Franklin Ave.\*

### Churches

Ala., Bessemer—Church of Christ erect building, Sixth Ave. and 16th St. Address The Pastor.

Ala., Bessemer—Sixteenth Avenue Methodist Church, Rev. W. N. Guthrie, Pastor, erect building.

Ala., Birmingham—First M. P. Church, West End, Rev. Jos. S. Eddins, Pastor, plans Sunday school annex.

Ala., Birmingham—Baptist Church erect brick building, Pleasant Grove. Address F. C. Lumpkin.

Ala., Tyrone—Baptist Church, Rev. Mr. Thomas, Pastor, have plans ready about Jan. 1 for bids on \$12,500 building; brick veneer, 2 stories, 34x79 ft., composition shingle roof, concrete and wood floors, hot air heat, miscellaneous steel, memorial windows; Alsop & Callanan, Archts., 324 Dermon Bldg., Memphis, Tenn.

Ark., El Dorado—Hebrew Congregation erect synagogue. Address The Rabbi.

Fla., Coral Gables, Miami—White Temple M. E. Church, Miami, W. H. Rudolph, Gen. Mgr., 644 Navarre Ave., erect branch church, Avenue Sorolla near Cortez St.; main auditorium, rectory and Sunday School.

Fla., Ocala—Presbyterian Church soon start work on Colonial building, 80x80 ft., seat 450; gallery 70; Geo. MacKay, Archt.

Fla., Tampa—Nebraska Avenue Methodist Church, Rev. W. E. Sewell, Pastor, plans \$125,000 building, Thelma and Mitchell Aves.; brick and concrete; 3 units, first to start about March 1.

Fla., Tampa—Dougherty & Gardner, Stahlman Bldg., Nashville, Tenn., reported drawing plans for \$300,000 church; plans ready about Feb.

Ga., Griffin—Christian Church plans Sunday school. Address The Pastor.

Ga., Waynesboro—Waynesboro Baptist Church, Rev. P. H. Anderson, Pastor, plans \$20,000 Sunday school.

Ga., West Point—Methodist Church erect \$35,000 building; gray brick, limestone trim, hollow tile, 3 stories, slate roof; bids in. Address The Pastor.

Md., Baltimore—St. Francis of Assisi R. C. Church, Rev. J. B. Manley, Pastor, Hamilton Station, erect \$80,000 building, Harford Rd. and Chesterfield St.; stone, 1 story and basement, 50x100 ft.; Alfred Cookman Leach, Archt., 411 N. Charles St.

Md., Towson, Baltimore—Towson Presbyterian Church, C. R. Titlow, Sec.-Treas., having plans drawn by Geo. Norbury MacKenzie, Franklin Bldg., Baltimore, for stone and reinforced concrete church; 1-story and basement, 116x40 ft.; contemplates Sunday School auditorium and manse later.

Miss., Ruleville—Baptist Church, Dr. Geo. H. Jarman, Pastor, having plans drawn by Walter R. Nelson, 883 Shrine Bldg., Memphis, Tenn., for \$20,000 building; brick veneer, 1 story and basement, 73x44 ft., Johns-Manville composition shingle roof, concrete and wood floors, art glass.\*

Miss., Ruleville—Baptist Church, Rev. Geo. H. Jarman, Pastor, erect \$20,000 building; brick veneer, 1 story and basement, 73x44 ft., Johns-Manville roof; Walter R. Nelson, Archt., Shrine Bldg., Memphis, Tenn.

Mo., Fairmount—Fairmount Lutheran Church, Rev. D. L. McConnell, Pastor, Kentucky and Ash Aves., erect \$30,000 building; stone and stucco, 1 story and basement, 40x82 ft.; E. O. Bostrom, Archt., Reliance Bldg., Kansas City.

Mo., Kansas City—Presbytery plans Presbyterian church in southeast section.

Mo., Pleasant Hill—Methodist Church, South, erect \$25,000 building; H. M. King, Archt., Board of Extension of M. E. Church, South, Louisville, Ky. Address The Pastor.

Mo., St. Louis—St. Louis Baptist Mission Board, Dr. S. E. Ewing, Pres., Security Bldg., contemplates \$50,000 church, Mimika and Florissant Aves.

N. C., Burlington—Benton & Benton, Fidelity Bldg., Wilson, are drawing plans for \$150,000 church and Sunday school.

N. C., Durham—St. Titus P. E. Church, Colored, Rev. Eugene L. Henderson, Rector, erect \$15,000 building; brick and stucco, 1 story, 35x75 ft.

N. C., High Point—Baptist Church, Dr. Lloyd T. Wilson, Pastor, plans \$250,000 building.

Okla., Ardmore—Broadway Baptist Church erect building. Address The Pastor.

Tex., Eastland—First Christian Church erect brick building. Address The Pastor.

Tex., Kerrville—Methodist Church, Rev. C. C. Wheat, Pastor, receives bids Jan. 19 for brick, concrete and hollow tile building; cost \$40,000; 1 story and basement and 2 stories; Morris & Noonan, Archts., Builders Exchange Bldg., San Antonio.\*

Tex., Lubbock—St. Paul's P. E. Church, Jed Rix, member Bldg. Comm., have plans ready about April 1 for bids on Gothic type building; cost \$25,000; Peters & Haynes, Archts.

Tex., Slaton—Church of Christ erect \$30,000 building; brick and reinforced concrete, 2 stories, 50x70 ft.; E. F. Rittenberry, Archt., 303 Blackburn Bldg., Amarillo.

W. Va., Parkersburg—First Presbyterian Church erect \$300,000 Gothic type building; Bertram, Grosvenor & Goodhue, Archts., 2 W. 47th St., New York.

### City and County

Ala., Bessemer—City, P. M. Mathews, Mayor, votes Feb. 14 on \$300,000 city hall bonds.

Ala., Birmingham—City Commission has offered 10-acre site and \$150,000 loan toward athletic stadium provided \$100,000 additional is raised; Junior Chamber of Commerce is interested; M. H. Sterne, care Ward, Sterne & Co., Brown-Marx Bldg., is treasurer of Junior Chamber of Commerce Stadium Committee.

Fla., Coral Gables, Miami—F. M. Button, Arts Center Bldg., has been selected as landscape architect by City of Coral Gables, Edw. E. Dammers, Mayor, connection with development for which \$4,532,000 bonds were recently noted voted, including \$300,000 for taking over and completing coliseum for municipal auditorium, \$100,000 for additional fire stations, \$250,000 for city hall and \$50,000 for emergency hospital.\*

Fla., Fort Lauderdale—Broward County Board of Commissioners consider revising courthouse plans and erecting \$350,000 structure instead of \$500,000 building previously noted; John M. Peterman, Archt., 346½ Las Olas Blvd.

Fla., Punta Gorda—Charlotte County Board of Commrs., J. T. Swinney, Chmn., receives bids Jan. 24 (lately noted Dec. 27) for courthouse; cost \$180,000; also bids same date for jail; cost \$20,000; plans and specifications from Leitner & Henson, Archts., 218 Magnolia Arcade, St. Petersburg; C. W. Creekbaum, Engr., Punta Gorda.\*

Ga., Homerville—Cline County Board of Commrs., J. P. Smith, Chmn., erect jail; bids in Jan. 4.

La., Baton Rouge—East Baton Rouge Parish Police Jury, Jos. B. Giblin, Pres., receives bids Jan. 26 for remodeling third floor of courthouse; restrooms, toilets, office fixtures; plans and specifications from office Wogan & Bernard, Archts., Raymond Bldg.\*

Tex., Abilene—City, Chas. E. Coombes, Mayor, voted \$1,341,336 bonds, including \$25,000 for fire station and \$60,000 for improvements to city auditorium; O. K. Hobbs, City Engr.\*

Tex., Largo—Pinellas County Board of Commrs., R. H. Summer, Chmn. Bldg. Comm., St. Petersburg, erect \$200,000 fireproof detention home near Largo; 2 stories, stucco and hollow tile; H. D. V. Pratt, Archt., 46 Bromfield St., Boston, Mass.\*

Tex., Plains—Yoakum County soon vote on courthouse bonds. Address County Commissioners.

Tex., Uvalde—Uvalde County Board of Commrs., Green B. Fennley, Jr., County Judge, receives bids Jan. 18 for courthouse; reinforced concrete brick stone hollow tile and mable; Henry T. Phelps Archt., Hicks Bldg., San Antonio.

Tex., Wichita Falls—City, W. E. McBroom, City Clk., receives bids Jan. 10 for fireproof city hall-auditorium, Euclid Keith Park; cost \$500,000; brick, stone, concrete and terra cotta, 2 stories, tile roof, concrete foundation; Voelcker & Dixon, Archts., 4 Kahn Bldg., Wichita Falls; Lang & Witcheil, Asso. Archts., 300 American Exchange Natl. Bank Bldg., Dallas.

### Dwellings

Ala., Albany—Roy C. Billings, care Central Natl. Bank, contemplates residence.

Ala., Dothan—Jesse G. Whitfield erect residence.

D. C., Washington—H. L. Lowe, care Reid & Lowe, Birmingham, Ala., reported erect \$50,000 residence, Porter St. near Connecticut Ave. N. W.; hollow tile and stucco, 2½ stories, 40x60 ft.; Jos. Bowman, Archt., 1430 K St. N. W.; Cornelius Jacoby, Engr., 1440 R St. N. W.

Fla., Coral Gables, Miami—S. A. Gaylord, 2512 Columbia Blvd., erect \$10,000 residence, 2500 Isabella St.

Fla., Daytona Beach—Hillcrest Construction Co. erect 8 additional dwellings, Hillcrest

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Drive, Westmoreland Ave. and Clarke St.; cost \$2000 each.

Fla., Jacksonville—J. P. LeMaster, 3515 Hedrick St., erect residence, San Marco, South Jacksonville.

Fla., Madison—J. G. Ashley erect residence, Hancock and Livingston Sts.; material on ground.

Fla., Monticello—W. H. Bulloch erect residence, Waukeenah St.; material on ground.

Fla., St. Petersburg—Hanson G. Ford, Englewood Inn, erect \$15,000 residence and garage, Granada Park Blvd. near Andalusia Way; cement tile, 2 stories, 7 rooms; Eric T. Clausen, Contr., Sumner Bldg.

Fla., St. Petersburg—Horace Hudson, 2736 Fifth Ave. N., erect 20 dwellings, 22d St. South, near Nebraska Ave.; total cost \$10,000.

Ga., Atlanta—A. Ten Eyck Brown, Archt., Forsyth Bldg., erect reinforced concrete and local stone residence, Paces Ferry Rd.; 2½ stories, 14 rooms, slate roof, hardwood, marble, tile and concrete floors, steel casement sash, marble stairs, hollow tile partitions, hardwood panels, low-pressure steam oil burners; work probably start Feb. 1.

Ga., Atlanta—W. H. S. Hamilton, Bldr., 331 Healey Bldg., reported erect \$20,000 residence, Andrews Ave.; 2 stories, brick and tile.

Ga., Atlanta—J. G. Ison, Peters Bldg., erect \$25,000 residence, Peachtree-Battle Ave.; brick, 3 stories, slate roof; Burge & Stevenson, Archts., 101 Marietta Bldg.; probably receive bids latter part of Jan.

Ga., Atlanta—W. O. May, 401 Austell Bldg., erect \$31,000 residence, 105 Harwell St.; 1 story, 5 rooms and bath, composition roof.

Ga., Macon—S. E. Odom, 513 Napier Ave., erect 3 brick veneer dwellings, 315-17-18 Buford Place; stucco dwelling, 109 De Soto Place; cost \$6000 each.

Ga., Macon—Cunningham Bryant erect 10 dwellings, Avenue A; also dwelling, Dempsey Ave.; total cost \$16,500.

Ga., Macon—S. E. Patton, Masonic Home Rd., erect 3 frame dwellings, North Ave., North Highlands; cost \$4500 each.

Ga., Savannah—Reuben Clark, Jr., erect 2-story brick residence, 47th St. near Reynolds St.; drawing plans.

Ga., Waycross—Mrs. B. F. Sirmans, Homerville, plans residence, Cherokee Heights.

Ky., Bowling Green—M. N. Craft erect residence, Morgantown Rd., near Bowling Green.

La., Covington—Rudolph M. Jung erect residence, Military Rd.

La., New Orleans—John Dart, Atty., Canal Commercial Bldg., contemplates several dwellings, Audubon Blvd. and Hickory Sts.

La., New Orleans—Mason & Spurl, Archts., Vincent Bldg., ready about Jan. 5 for bids on dwelling, County Club Place; cost \$25,000; hollow tile and stucco; also in few days for bids on raised hollow tile and stucco dwelling, Gentilly Parish; cost \$20,000; hardwood floors, warm air heat, hot water heaters.

La., New Orleans—Christian Schertz, 1464 Broad St., alter and erect additions to 2-story brick and frame residence, Bayou St. John; Moise H. Goldstein Archt., Hibernia Bldg., ready for bids latter part of Jan.

La., New Orleans—Saul Streiffner, 2141 Magazine St., receiving bids for frame and stucco raised bungalow, Versailles Blvd.; 37x75 ft., tile roof, baths and porch steps, plastered interior, hot water heaters; Lockett & Chachere, Archts., Title-Guarantee Bldg.

La., New Orleans—K. C. Zetman, 1824 Adams St., erect double raised residence, Short St. near Hickory St.; cost about \$10,000.

Md., Baltimore—Geo. E. Stone, Archt., care Stone & Ganter, Knickerbocker Bldg., drawing plans for \$40,000 dwelling, Green Spring Valley; 3 stories, brick.

Md., Baltimore—Buckler & Fenhagen, Archts., 325 N. Charles St., drawing plans for \$30,000 dwelling, Lakeridge; 2½ stories, 36x40 ft., stone.

Md., Baltimore—Johns Development Co., J. E. Stansbury, 2852 Pennsylvania Ave., erect 12 dwellings, Greenbrier St., near Maravia Ave.; frame, 1½ stories; probably take bids about March 1.

Md., Baltimore—Mrs. Geo. T. Wagandt, 1901 Light St., erect residence, Blythwood Road.

Md., Baltimore—M. Ernest Jenkins, Abell Bldg., erect \$50,000 residence near Lake Ave.; stone, 2½ stories, 136x34 ft.; Laurence Hall Fowler, Archt., 347 N. Charles St.; L. L. Chambers, Inc., Contr., 36th St. and Roland Ave.

Md., Baltimore—C. C. Porter, 352 Gwynn

Ave., erect \$12,000 residence and garage, 302 St. Dunstons Rd.; 2 stories, frame.

Md., Baltimore—Geo. W. Rife, Jr., 24 Fallaway, and Clifton K. Wells, Jr., 3538 Old York Rd., erect brick dwelling, Upnor Rd., Homeland.

Md., Chevy Chase (Branch Washington, D. C.)—Harry J. Burch, care A. B. Mullett & Co., Archts., Union Trust Bldg., 15th and H Sts. N. W., Washington, erect brick residence, Grove St.; 2 stories, 34x37 ft.; bids in.

Md., Hagerstown—R. Dawson, care Sterling Electric Co., 100 N. Center St., erect \$30,000 residence; 2½ stories, 30x60 ft.; brick; R. Hitchens, Archt., Liberty Trust Bldg.

Mo., Kansas City—E. V. Holden, Archt., 4638 Wornall Rd., purchased homesite, Oak St. near 51st St., Southwood Park.

Mo., St. Louis—A. N. Baker, 802 Chestnut St., erect \$50,000 residence, La Hacienda subdivision; 2 stories and basement, 75x45 ft., stucco, tile and brick; P. Valentine, Archt., 8724 Rosalie Ave.

Mo., St. Louis—David Kessler, 5797 Westminster Place, erect \$25,000 residence, Aberdeen Place and Skinker Rd.; brick, 2 stories, 36x32 ft.; Wedemeyer & Nelson, Archts., Wainwright Bldg.

Mo., St. Louis—C. A. Keenig, 2036-A Russell Ave., has drawn plans for \$18,000 dwelling, Kingshighway S. W., near Arenades St.; 2 stories and basement, brick, terra cotta trim; bids in Spring.

Mo., St. Louis—E. S. Elder, 6157 Waterman St., erect brick, hollow tile and stucco residence, Fair Oaks Drive; 2 stories and basement, 61x32 ft., 10 rooms, 2 tile baths, metal lath, slate roof, reinforced concrete slabs, Granitoid and concrete terraces, concrete basement, garage; Marcel Boulicault, Archt., 719 Buder Bldg.; bids in.

Mo., St. Louis—C. H. Bayless erect 19 dwellings, La Due Terrace; Manske & Bartling, Archts., 410 N. Euclid St.

Mo., St. Louis—Mrs. N. N. Kuhn and Geo. Mellow, 2809 Castleman St., erect brick, hollow tile and stucco residence, Fair Oaks Drive; 2 stories and basement, cut stone and terra cotta trim, concrete basement, Granitoid and concrete terraces, 2 tile baths, metal lath, garage; Marcel Boulicault, Archt., 719 Buder Bldg.; bids in.

Okla., Blackwell—J. J. Mans erect dwellings.

Okla., Oklahoma City—H. L. Guild, S. W. Natl. Bldg., erect two \$5000 brick veneer dwellings, 2033 W. 21st and 2526 W. 19th Sts.

Tenn., Knoxville—James Van Deventer, Lyons Bend Rd., Bearden, erect number dwellings, Fountain City Heights.

Tenn., Memphis—Frank May, care May Brothers Lumber Co., Kentucky Ave., erect \$40,000 residence; brick, 2 stories, about 70x90 ft., tile roof and baths, oak floors, steam heat, garage and servants' quarters; Sieg & McDaniel, Archts., First Nat. Bank Bldg.

Tex., Fort Worth—C. C. Flowers erect \$10,000 brick veneer residence, 4915 Byers St.

Tex., Houston—Emenhiser & Myklebust, Second Natl. Bank Bldg., erect \$10,000 brick veneer dwelling and frame garage, 1615 Blodgett Ave.; Alameda addition; 2 stories.

Tex., Houston—L. W. Lindsay, Second National Bank Bldg., erect 3 brick veneer dwellings, 1514 Calumet, 5506 Crawford and 2013 Ruth Sts.; 8 and 6 rooms; total cost \$38,000.

Tex., Raymondville—W. A. McKenzie, Smackover, Ark., plans number business houses and dwellings.

Tex., San Antonio—M. L. Apfel, 305 E. Magnolia Ave., erect \$11,000 residence, 100 block E. Agarita Ave.; frame and stucco, 2 stories; J. I. White, Archt., Houston Bldg.

Tex., San Antonio—Carl Newton erect \$50,000 residence; tile and stucco, metal lath, patent plaster inside walls and ceilings, hardwood floors, Spanish tile roof, tile floors and wainscoting in baths; Atlee B. and Robt. M. Ayres, Archts., 626-27 Bedell Bldg.

Tex., San Antonio—Col. Brit R. Webb, 325 W. French Place, erect \$50,000 tile and stucco residence; metal lath, patent plaster inside walls and ceilings, hardwood floors, Spanish tile roof, tile floors and wainscoting in baths; Atlee B. and Robt. M. Ayres, Archts., 626-27 Bedell Bldg.

Va., Norfolk—Rochambeau, Inc., erect 6 dwellings, Glen Cove, Address B. B. Spigel, Archt., Nusbaum Bldg.

### Government and State

Ala., Maxwell—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$200,000 for barracks and non-commissioned officers' quarters at Maxwell Field.

D. C., Washington—Government, Lieut. Col. U. S. Grant 3d, Director Dept. of Public Works, has low bid at \$185,000 from N. P. Severin Co., Chicago, Ill., for repairs to White House.

Ga., Fort Benning—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$725,000 for continuing barrack construction.

Md., Camp Meade—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$410,000 for barracks to replace present quarters.

Md., Edgewood—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$90,000 for officers' quarters at Edgewood Arsenal.

N. C., Fort Bragg—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$500,000 for barracks.

Tex., Fort Sam Houston, San Antonio—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$500,000 for barracks.

Va., Fort Humphreys—War Dept., Dwight F. Davis, Sec., Washington, D. C., allocated \$500,000 for barracks.

### Hospitals, Sanitariums, Etc.

Ala., Sheffield—Colbert County Hospital Bldg. Comm., Allen J. Roulhac, Chmn., receives bids Jan. 22 at Courthouse, Tusculumbia, for hospital; cost \$150,000; reinforced concrete; plans and specifications on file at Probate Office, Tusculumbia, and may be had from Bem Price, Archt., Age-Herald Bldg., Birmingham.

D. C., Washington—War Dept., Dwight F. Davis, Sec., plans 2 new wings to main hospital building, Walter Reed General Hospital, with new clinical laboratories; cost \$2,000,000.

Fla., Lakeland—Atlantic Coast Line Railroad, Hospital Division, considers taking over and expending \$25,000 to improve city hospital.

Fla., Sanford—City, Forrest Lake, Mayor, votes Jan. 18 on \$250,000 hospital bonds; \$100,000 bonds already available.

Md., Cumberland—Western Maryland Hospital, Miss Catherine Obert, Supt., 221 Baltimore Ave., erect 100-bed hospital; 6-stories, brick; architect not selected.

Md., Cumberland—Alleghany Hospital, Sister Mary Fidels, contemplates 3-story brick addition to hospital, 215 Decatur Ave.

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Commission, R. L. Brown, Sec., Box 40, receives bids Jan. 18 (extended date) for group of buildings for \$2,500,000 Mississippi Insane Hospital; administration building, chronic cottage, laundry, commissary; plans and specifications from N. W. Overstreet, Archt., Overstreet Bldg.

Mo., Lees Summit—Lees Summit Hospital erect 91x14-ft. addition. Address The Supt.

Mo., Louisiana—Otis Smith Estate, care Isaac T. Orr, 323 N. Broadway, St. Louis, erect \$150,000 hospital; brick, 2 stories; Geo. D. Barnett, Inc., Archt., Syndicate Trust Bldg., St. Louis, probably take bids about Jan. 10 or Jan. 15.

Mo., St. Louis—Sisters of Mercy, Mother Michael, Sister Superior, 307 S. Euclid Blvd., erect \$150,000 nurses' home; brick and reinforced concrete, 7 stories; Geo. D. Barnett, Inc., Archt., 913 Syndicate Trust Bldg.; soon take bids on revised plans.

N. C., High Point—Guilford County Sanatorium, Dr. Jos. Spruill, Supt., contemplates \$30,000 ward for undernourished children; accommodate about 30.

Okla., Tulsa—Tulsa Memorial Hospital erect hospital; Leland I. Shumway, Archt., Alexander Bldg.

Tenn., Murfreesboro—Rutherford Hospital, S. B. Christy, Chmn., having plans drawn by W. R. Bell, Jr., for \$10,000 nurses' home, gift of Samuel H. Hodge, Chicago, Ill.; brick, 2 stories, 55x33 ft., wood floors, concrete foundation, asbestos roof.

Tex., Eastland—Eastland Mineral Water Co., K. C. Ferguson, Pres., 204 Exchange Bank Bldg., about ready for bids on bath house and clinic, including heating plant, air-cooling equipment, etc.

Tex., Kingsville—Kleburg County Commission contemplates election on hospital addition bonds.

Tex., San Antonio—Physicians and Surgeons Hospital Corp., J. H. Cunningham, Pres., Gunter Bldg., have plans ready about June 1 for brick, hollow tile and stucco hos-

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pital, Richmond and Camden Sts.; cost \$1,000,000. Spanish type, 5 stories and basement, 300x150 ft., 4 wings, oak, tile and composition floors, tile roof, reinforced concrete foundation; furnishings, equipment, etc., \$100,000; Phelps & DeWees, Archts., Gunter Bldg.\*

### Hotels and Apartments

Fla., St. Petersburg—J. E. Bean erect \$10,000, 2-story, frame, 4-apartment house at 3443 Haines Road in Allendale Terrace.

Fla., South Jacksonville (Ind. Br. of Jacksonville)—Victor Zambetti, E. 14th St., plans construction of \$50,000 apartment house in San Marco.

Fla., Venice—E. L. Worthington has permit for \$90,000, 62-room apartment building.

La., New Orleans—Wogan & Bernard, Archts., Title-Guarantee Bldg., placed plans and specifications on market; receive bids until Jan. 26 for construction of \$1,250,000, 18-story, steel and white terra cotta, brick, fireproof addition to Monteleone Hotel, Royal St. between Iberville and Bienville Sts.; 300 rooms each with bath and shower, mezzanine floor contain ballroom and auditorium to seat 700, women's beauty parlor and other shops; high-speed elevators.\*

La., New Orleans—Following contractors received plans and specifications and propose to bid on construction of \$1,250,000, 18-story addition to Monteleone Hotel, Royal and Iberville Sts., general contract bids to be opened Jan. 26: George J. Glover Co., Inc., Whitney Bldg.; O. M. Gwin Construction Co., Union Indemnity Bldg.; W. Horace Williams Co., Inc., Southern Bldg.; Lionel F. Favret, Louisiana Bldg.; J. V. and R. T. Burkes, Carondelet Bldg.; Jos. Frombers, Inc., Title-Guarantee Bldg.; C. A. D. Bayley & Co., Interstate Bldg.; all New Orleans; Kaucher-Hodges & Co., Shrine Bldg., Memphis, Tenn.; Henger & Chambers, 1528 Main St., Dallas, Tex.; Southwestern Construction Co., West Bldg., Houston, Tex.; Thompson-Starrett Co., 101 Marietta St., Atlanta, Ga.; Wogan & Bernard, Archts., Title-Guarantee Bldg.\*

Mo., Solomons—Point Patient Hotel and Development Corp., Howard Whelan, Pres., 831 E. Chase St., Baltimore, plans \$175,000, 3-story, 125x150-ft., tile and stucco, 90-room summer hotel building on Point Patient, Solomons Island; J. O. Blair, Archt., 3613 Grantly Road, Baltimore, taking bids on general contract; Mr. Whelan is Engr.

Miss., Gulfport—Leo E. Deutsch and Edward Milgram of Gary, Ind., selected N. W. Overstreet, Miss. Fire Ins. Co. Bldg., Jackson, prepare plans and specifications for 8-story commercial hotel, 14th St. and 26th Ave., to be erected in spring.

Miss., Pascagoula—J. J. Jane, owner of Poi Hotel, will make improvements; plans enlargement in future.

Mo., Clayton, St. Louis—Hanley Road Realty Co., care B. M. Nevins, 4907 Delmar Blvd., plans construction of \$1,000,000, 4-story, 180x150-ft., stucco on tile apartment building, Hanley Blvd., between Wydown Blvd. and Clayton Road; Widner Engineering Co., Archts.-Engrs., Laclede Gas Bldg., St. Louis, taking bids on all separate contracts.

Mo., Kansas City—Mike H. Hens, 1324 Prospect St., has plans by Nellie E. Peters, 1006 Orear Leale Bldg., for \$100,000, 2-story and basement, brick and steel, 88-unit apartment building, 12th and Monroe Sts.

Mo., Kansas City—Dr. G. Wilse Robinson will erect 3-story, 82-unit apartment house on east side of Paseo.

Okla., Chilton—Carl Kemp, Cheyenne, contemplates erecting 2-story hotel building.

Okla., Okmulgee—Chamber of Commerce, care C. H. Kretz, Chmn. Bldg. Comm., has plans in progress by Smith & Senter, Archts., Commerce Investment Bldg., for \$800,000 hotel building.\*

Okla., Tulsa—Henry Ketchum, owner and manager of Hotel Tulsa, announced plans for early construction of \$500,000, 15-story addition, to contain 162 rooms, each with bath, 40x84-ft. ballroom; Lee I. Shumway, Archt., Alexander Bldg.

Tenn., Elizabethton—Dr. J. C. Bowers of Elizabethton and H. G. Cowan, 1656 St. Johns St., Jacksonville, Fla., announced plans for 34-suite furnished apartment building to be built at corner Watauga Ave. and G St.

Tenn., Elizabethton—Fred T. Carrier, owner of Eat More Bakery, plans to build 18-suite apartment house on F St., Sunset Hill.

Tex., Amarillo—Alex Davidson reported to erect \$2,000,000 hotel to be operated by Baker Hotels Co., care T. B. Baker, Pres., Gunter Hotel, San Antonio.

Tex., Waco—O. H. Cross, McGregor Rd., reported has indefinitely postponed construction of \$700,000, 12-story hotel building.

Fifth and Franklin Sts.; Lang & Witchell, Archts., 300 American Exchange Bank Bldg., Dallas.\*

Tex., Plainview—J. N. Donohoo has plans and specifications in progress by Kerr & Walsh, Archts., for \$250,000, 5-story, fireproof, brick and reinforced concrete hotel building, S. W. cor. Baltimore and Sixth Sts., work to begin in spring; about 100 rooms each, with bath; also theater, barber shop, coffee shop, drug store and lobby; will be managed by F. A. Hart, Mgr. of Hotel Ware.

Va., Appalachia—C. B. Kearfoot, Archt., Bristol, reported preparing plans for \$250,000 hotel building.\*

### Miscellaneous

Fla., Fort Pierce—Maravilla Golf & Country Club, Paul G. Enns, Pres., will erect new building to replace clubhouse recently burned.

Fla., Sebring—Melvil Dewey, Mgr. of the Lake Placid Club, Lake Placid, N. Y., reported conferring with architects and engineers regarding proposed clubhouse, golf course, etc.

Md., Bethesda—Baptist Children's Home Society, Miss N. N. Talmadge Supt., 904 Newton St. N. E., Washington, D. C., has sketches under way by Pierson & Wilson, Washington Loan & Trust Bldg., Ninth and F Sts. N. W., Washington, for \$100,000 2-story brick or hollow tile home.

Mo., Normandy—Glen Echo Country Club, Guy E. Bramer, Sec., Rwy. Exchange Bldg., St. Louis, has plans in progress by P. J. Bradshaw, International Life Bldg., St. Louis, for \$400,000, 2-story, stucco on tile clubhouse.\*

Mo., St. Louis—Hadley Dean Glass Co., L. G. Hadley, Pres., 11th and Lucas Sts., reported, contemplates erecting \$1,000,000, 5-story, brick and reinforced concrete warehouse and office building; also \$1,000,000, 22-story loft building.

Mo., St. Louis—E. N. Nims, Pres. of Southwestern Bell Telephone Co., is chmn. of building comm. and Jackson Johnson, chmn. of board of International Shoe Co., 1505 Washington St., is chmn. of general comm. planning construction of Metropolitan Club, S. E. cor. Kingshighway and Maryland Ave., to cost \$1,250,000 to \$1,750,000; Mauran, Russell & Crowell, Archts., Chemical Bldg.

Tenn., Knoxville—S. & W. Cafeteria, Independence Bldg., Charlotte, N. C., will renovate first floor of Journal Bldg. at cost of \$50,000 for use as cafeteria; include \$10,000 pipe organ.

Tex., Houston—Fred W. Ankenmann, 1655 Hawthorne St., local agent for St. Louis Nationals and Pres. of the Houston Buffs, reported planning construction of \$150,000 to \$250,000 baseball park, to include concrete stands, etc.

### Railway Stations, Sheds, Etc.

Mississippi—Louisville and Nashville Railroad Co., W. H. Courtney, Ch. Engr., Louisville, Ky., will erect \$60,000 depot at Edgewater.

Miss., Jackson—Illinois Central Railroad, F. L. Thompson, Ch. Engr., Chicago, Ill., reported has accepted plans, with exception of some interior changes to be made, for construction of \$500,000 passenger station; contracts probably not let for 2 months.

Tex., McAllen—Southern Pacific Lines, R. W. Barnes, Ch. Engr., Houston, reported planning construction of \$30,000 station.

### Schools

Ala., Auburn—Alabama Polytechnic Institute, Dr. Spright Dowell, Pres., will rebuild Sigma Nu fraternity house recently burned.

Ala., Fairfield—Board of Education has plans in progress by Denham, Van Keuren & Denham, Age-Herald Bldg., Birmingham, for \$115,000 High School building.

D. C., Washington—District Commissioners, Room 509, District Bldg., receive bids until Jan. 7 for construction of addition to Langley Junior High School; proposal forms at Room 427 District Bldg.

Fla., Lakeland—Florida Military Academy, care Col. G. R. Wilson, Green Cove Springs, planning early construction of \$300,000 building to house students of Senior School; Talley, Buckley & Talley, Archts., 105 Daughtry Bldg.

Fla., Madison—Madison County Board of Public Instruction reported to start work in 60 days on High School building between N. Parramore St. and Brookwood Ave.

Fla., Miami—Dade County Board of Public Instruction, Charles M. Fisher, Supt., postponed opening of bids for construction of \$1,000,000 Central School building from Jan. 10 to Jan. 24; Kiehnel & Elliott, Archts., 930 Seybold Bldg.\*

Ga., Atlanta—Fulton County Board of Education will have plans about Jan. 15 for following school buildings: One-story, brick veneer, 4-classroom and auditorium school at Adamsville; \$45,000, 2-story, 12-classroom and auditorium addition to Peachtree Heights School, and \$45,000, 2-story, brick veneer, 14-classroom and auditorium Marion Smith School at Eagan; A. Ten Eyck Brown, Forsyth Bldg., Archt. for Adamsville; Hentz, Reid & Adler, Candler Bldg., Archts. for others; also for \$35,000, 1-story, brick veneer, 12-classroom and auditorium school at Center Hill and \$45,000, 14-classroom and auditorium building on Howell Mill Road; Daniel & Beutell, Archts., Healey Bldg.

Ky., Paducah—McCracken County Board of Education, C. H. Gentry, Supt., will sell site of Lone Oak high school building recently burned; select another site for proposed new building.

La., Greenwood—Edward F. Nelld, Archt., Merchants Bldg., Shreveport, receives bids until Jan. 17 for construction of auditorium for Greenwood school building.

La., Iota—Acadia Parish School Board, Crowley, selected Herman J. Duncan, Archt., Alexandria, prepare plans and specifications for construction of 1-story brick school building and for repairs to present building; \$50,000.\*

La., New Orleans—E. A. Christy, Supv. Archt. of Orleans Parish School Board, City Hall Annex, will complete plans and specifications early in February for alterations and additions to 2-story, brick Kohn school, Camp and Gen. Pershing Sts.; cost \$40,000.

La., Tullos—La Salle Parish School Board, Jena, will select architect Feb. 1 to prepare plans and specifications for proposed 2-story brick and reinforced concrete school building; \$60,000 bonds recently voted.\*

La., Winnfield—S. J. Sikes, Supt. of Winn Parish School Board, announced election will be held in Jan. on bond issue for erecting brick school building.

Miss., Jackson—H. V. Watkins, Pres. Board of Trustees, Hinds County Agricultural High School and Junior College, receives bids until Jan. 14 for construction of new roof on administration building; plans and specifications may be obtained from J. M. Spain, Archt., Millsaps Bldg.

Miss., Natchez—Board of Education has plans in progress by P. J. Krouse, M. & W. Bldg., Meridian, for \$200,000 High School building.\*

Miss., Pass Christian—City, J. H. Spence, Mayor, ordered election on \$5000 additional bonds for construction of negro school; \$20,000 bonds already issued; construction to be changed from frame to brick.\*

Mo., Kansas City—Board of Education, James B. Jackson, Sec., Library Bldg., will have plans out for bids in spring for 3-story and basement, brick and stone Longfellow Grade School addition, N. W. cor. 29th and Holmes Sts.; C. A. Smith, Archt., Finance Bldg.; Nate W. Downes, Mech. Engr., Finance Bldg.

Mo., Marble Hill—W. C. Ferguson, Pres. of Will Mayfield College, advises rebuilding of recently burned Rosemont Hall, will not be started for 6 to 12 months.\*

N. C., Salisbury—Rowan County Board of Education, George Howard, Supt., plans enlargement program, including construction of 3 consolidated schools at Woodleaf, Cleveland and Mount Ulla.

Okla., Forney—Board of Education, J. T. Reed, Supt., plans \$10,000 bond election soon for erection of \$14,000 school building.

Okla., Tulsa—Board of Education, William B. Weston, Sec., has plans in progress by Leland I. Shumway, Alexander Bldg., for 2 new school buildings and additions to number of present schools; \$750,000 bonds recently voted.\*

S. C., Columbia—Board of School Commissioners, A. C. Moore, Chmn., receives bids until Jan. 11 for construction of Junior High School building; plans and specifications may be obtained from J. B. Urquhart, Archt., 607 Palmetto Bldg.\*

Tenn., Knoxville—Board of Education has authority to purchase tract north of E. Vine Ave. and extending to Shady St. as site for negro high school building.

Tenn., Knoxville—Board of Education, L. H. Spilman, Pres., conferring with Wm. B. Ittner, Const. Archt., Board of Education Bldg., St. Louis, Mo., on final plans for 1927 building program; tentative plans call for following: Addition to Moses school, including new auditorium; addition to Brownlow school and possible addition to Mountain View school; new buildings for West Lonsdale and Griffin schools; addition to Lincoln Park school; plans to have \$809,000 available.\*

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Tenn., Memphis—Board of Education, W. J. Prescott, Pres., purchased Van Fleet residence and estate on Poplar Ave. as site for proposed \$500,000 technical high school.

Tex., Abilene—City voted \$200,000 bonds for construction of High School building; Charles E. Coombes, Mayor.\*

Tex., Abilene—Abilene Christian College, F. B. Shepherd, Fiscal Agent, open bids about Feb. 1st for construction of \$150,000, 3-story, fireproof, steel and concrete, 152x124 ft. school and church building; concrete and wood floors, concrete foundation, composition roofing, equipment and furnishings cost \$75,000; Nichols & Campbell, Archts. See Machinery Wanted—Building Materials.\*

Tex., Beaumont—City has voted \$200,000 bonds for erection of High School building in South Park School District, Church St. at Avenue A; C. W. Bingham, Supt., Board of Education.\*

Tex., Brady—Board of Education, W. N. Ellis, Sec., receives bids Jan. 10 for construction of cottage building and school; 1 story, brick, hollow tile, 40x68 ft.; R. S. Glenn, Archt., Cisco.

Tex., Dallas—Board of Education ordered Coburn, Smith & Evans, Archts., 2006 Republic Bank Bldg., complete final plans for \$80,000, 1-story, brick and stone, 13-room Ruthmede school building.

Tex., Donna—Board of Education contemplates \$300,000 school bond election in near future.

Tex., La Porte—St. Marys University, care C. E. Byrne, Bishop of Galveston, has plans in progress by Maurice J. Sullivan, Second Natl. Bank Bldg., Houston, for 120x48 ft., reinforced concrete, brick and stone chapel, in honor of late Rt. Rev. Mgr. J. M. Kirwin; Spanish tile roof, terrazzo floors, reinforced concrete. See Machinery Wanted—Building Materials.

Tex., McAllen—Board of Education opens bids Jan. 12 (postponed from Jan. 5) for construction of \$200,000, 3-story, 125x200-ft. High School building; Ralph H. Carmern, Archt., Natl. Bank of Commerce Bldg., San Antonio.\*

Tex., Mission—City voted \$85,000 bonds for erection of Junior high school building. Address School Board.\*

Tex., San Antonio—Board of Education opens bids Jan. 11 (postponed from Jan. 4) for construction of \$22,000, 1-story, 4-room, brick, concrete and cast stone addition to Collins Garden public school building; Phelps & Dewees, Archts., Gunter Bldg., San Antonio.\*

### Stores

Ark., Little Rock—John F. Boyle, Boyle Bldg., will not erect commercial building on W. Fifth Ave. as reported.\*

Fla., High Springs—H. McL. Graday plans construction of block of stores on First Ave. North.

Fla., Pensacola—W. E. Porter erect \$12,000 store buildings, Gadsden St. and 13th Ave.

La., Shreveport—L. J. Schmitt has plans in progress by E. A. George, 1146 Kingshighway, for \$15,000, 36x110-ft. brick and concrete business building, 412 Crockett St.

Md., Frederick—Charles F. Cramer will remodel property for storeroom and apartments.

Miss., Gulfport—Chicago Investment Co. has plans in progress by N. W. Overstreet, Miss. Fire Ins. Co. Bldg., Jackson, and Gulfport, for \$31,600, 1-story, semi-fireproof, 75x100 and 75x45-ft. stores building, 25th Ave.; composition roofing, concrete spread footings foundation, cement finish flooring; plans in preliminary state. (See Machinery Wanted—Building Materials; Ventilators.)\*

Mo., St. Louis—O. B. Strub, 4338 Rosalie Ave., has plans by C. L. Mellert, 207 Wainwright Bldg., for \$22,000, 2-story and basement, 49x43-ft brick store and apartment building, Pope and Rosalie Ave.

Mo., St. Louis—W. P. McMahon, Archt., Buder Bldg., completed plans for \$50,000, 2-story, 50x100-ft. business building, 3136 Olive St., for Edgar Rozler, 4837 Leclerc St.

Okla., Tulsa—G. R. Chapin, 2701 E. Sixth St., has plans in progress by A. C. Fabry, 619 N. 12th St., for \$30,000, 2-story and basement, 100x50 ft., brick, 5-store and 5-apartment building.

Tenn., Knoxville—Crouch's Floral Shop, 608 S. Gay St., care Mrs. W. H. Crouch, leased property at 623 S. Gay St.; will remodel front, etc.

Tenn., Nashville—Warren B. Sloan, Murphy Rd., erect \$10,000, 2-story, brick, 5-store building, 46th and Charlotte Ave.

Tex., Brownwood—Oscar Kunitz erect \$20,000 brick building at Brown Ave. and E. Anderson St.

Tex., Corpus Christi—Nicholas Metaxas, 1129 Railroad Ave., soon have completed plans by Callaway & Nethercot, 622 Mesquite St., for \$16,000, 2-story, 55x50-ft., brick, hollow tile and reinforced concrete store and rooming house.

Tex., Corpus Christi—Howard Lawson opened bids for erecting \$75,000, 2-story, brick, reinforced concrete store and apartment building; 100x140 ft.; foundation and frame for 5 additional stories; G. W. Mitchell, Builders Exchange Bldg., San Antonio, low bidder; Hamon & Co., Archts., 410½ Peoples St.\*

Tex., Dallas—J. W. Murphy, 6202 Price St., plans immediate construction of \$35,000, 2-story, brick, 107x62-ft. 6-store and 4-office building, St. Paul and Bryan Sts.

Tex., Fort Worth—B. L. Waggonman, 112½ W. Ninth St., erect \$13,500 brick store at Taylor and Weatherford Sts.

Tex., Fort Worth—J. Willis, 115 Bryan St., erect \$10,000 brick store at 200 S. Main St.

Tex., Raymondville—W. A. McKenzie, Smackover, Ark., number business buildings. (See Buildings Proposed—Dwellings.)

W. Va., Bluefield—S. S. Kresge Co., 2238 Third Ave., New York, leased first floor and basement of Coal & Coke Bldg., Raleigh and Federal Sts.; will make initial expenditure of \$50,000 for improvements and alterations.

W. Va., Fenwick—J. I. Dorsey erect store building, replace structure burned. See Machinery Wanted—Building Materials.

### Theaters

Fla., Gulfport—S. J. Webb, Pres. of Webb & Yates, Inc., Second St., advises regarding erection of theater building; ) "Subscription

## BUILDING CONTRACTS AWARDED

### Association and Fraternal

Md., Hagerstown—Woodmen of the World, N. Potomac St., let contract at \$31,900 to C. F. Schleigh, S. Cannon Ave., for brick and hollow tile lodge building; 3 stories, oak and maple floors, Spanish tile and Johns-Manville 4-ply roof; furnishings, equipment, etc., \$2500; A. J. Klinkhart, Archt., N. Washington St.; heating to C. V. Harbaugh, \$5500; work under way. Address equipment proposals to C. O. Hartsock, First Natl. Bank Bldg.\*

### Bank and Office

Mo., St. Louis—Cass Avenue Bank, Jacob F. Hellrung, Pres., 1501 Cass Ave., erect Indiana stone building; 2 stories and basement, 60x130 ft.; St. Louis Bank Building & Equipment Co., Contr., Ninth and Sidney Sts.

N. C., Greensboro—American Furniture & Fixture Co., 2823 E. Main St., Richmond, Va., has contract for furnishings and equipment contract for \$1,250,000 Greensboro Bank & Trust Co.; cost about \$100,000, walnut and Vert Cavall Claire marble; C. C. Hartmann, Archt., Jefferson Bldg.; Angie-Blackford Co., Contr., American Bank Bldg.\*

Tex., Beaumont—John Forrest Goodhue, Pearl and Crockett Sts., and associates erect \$600,000 office building by day labor; reported ready for sub-bids after Jan. 1; fireproof, brick, stone, steel and reinforced concrete, 12 stories, 60x118 ft., 4 high-speed elevators, cement and marble floors, built-up roof, refrigerating system; Tisdale, Stone & Pinson, Archts., 419 Ind. Life Bldg.; J. S. Nichols, Engr., American Trust Bldg., both Nashville, Tenn.\*

Tex., Cleburne—J. W. Floore let contract at \$23,500 to A. H. Stuart, 406 Williams Ave., for office and lodge building, 109-11 N. Caddo St.; brick, 2 stories, 105x45 ft., hardwood and cement floors, cement foundation, tar and gravel roof; Will T. Floore, Archt.; work started.\*

Tex., Pampa—First National Bank, B. E. Finley, Pres., plans changing building; H. L. Case in charge of reconstruction.\*

Tex., San Antonio—Smith Brothers Development Co., Plaza Hotel, erect \$650,000 office building, St. Marys St.; also \$200,000 advertising building; brick, stone and reinforced concrete, 12 stories; Albee B. and Robt. M. Ayres, Archts., 622 Bedell Bldg.; McKenzie Construction Co., Contr., Travis Bldg.; work start in spring.

### Churches

Ark.-Tex., Texarkana—Church of the Nazarene, Eighth and Brown Sts., Rev. W. B. Walker, Pastor, erecting \$12,000 building; brick veneer, 62x56 ft., 1 story.

of stock and incorporation of company to finance and manage this project is being sponsored through this office." Recently reported incorrectly as contractors.\*\*

Md., Sparrows Point (Br. of Baltimore)—J. O. Blair, Archt., 3613 Grantly Road, Baltimore, preparing sketches for \$25,000, 1-story, brick or concrete motion picture theater; owner's name withheld.

N. C., Greensboro—James M. Workman and J. H. de Sibour, Engr. and Archt., 111 N. Greene St., advise regarding construction of \$300,000, 2-story, 110x225-ft., reinforced concrete and steel Carolina Theater, Greene and Washington Sts. "Low bidder on this job is the Consolidated Engineering Co., 20 E. Franklin St., Baltimore, but the contract has not yet been awarded due to necessity for making reductions in cost; architectural design may have to be radically changed." Owners are National Amusement Co., T. G. Leitch, Pres., S. Elm St.\*

Tenn., Chattanooga—Emmett R. Rogers, Mgr. of Tivoli Theater, announced plans for remodeling to cost \$20,000; include new stage, scenes, draperies, etc.

Tex., Denton—W. S. Long, Denton, has preliminary plans in progress by W. S. Van Slyke & Co., 402 Reynolds Bldg., Fort Worth, for \$60,000 brick and frame theater and business building; store building 2 stories, 60x100 ft.; theater 1 story, 30x120 ft.

### Warehouses

Mo., St. Louis—St. Louis Bakers Co-operative Assn., E. H. Hohengarten, Sec. & Mgr., 210 Market St., soon select architect for 1 and 2 story and basement, 200x118-ft. brick warehouse and office building, N. E. cor. Theresa and Chouteau Sts.

La., Ponchatoula—St. Joseph's R. C. Church, Rev. Jos. Gonzales, Pastor, let contract at \$30,500 to Dudley & Winkle Construction Co., 823 Poydras St., for brick building; plastered interior, slate roof, art glass windows, concrete and wood floors; Wogan & Bernard, Archts., Title-Guarantee Bldg., both New Orleans.\*

Okla., Ardmore—St. Philip's P. E. Church let contract at \$33,900 to T. E. Snelson for building, 1 story, 35x80 ft., stone; J. B. White, Archt.\*

Okla., Hominy—First Christian Church, Rev. R. R. Hildbrand, Pastor, let contract at \$27,275 to W. B. Wilson, Ponca City, for brick and stone building; 1 story and basement; Sorey & Vahlberg, Archts., Braniff Bldg., Oklahoma City.\*

Tenn., Memphis—Skinner Organ Co., 677 Fifth Ave., New York, has contract for \$40,000 to \$50,000 console organ for \$600,000 Idlewild Presbyterian Church under construction; Chas. O. Pfeil and Geo. Awsumb, Archts., both Union and Planters Bank Bldg.; B. E. Buffalo & Co., Contr., 658 East St.\*

Tex., Houston—Emmanuel Baptist Church, Rev. J. H. Ellis, Pastor, let contract on cost plus basis to C. E. Williamson, 625 Merrill St., for \$50,000 building, Norwood and Jewell Sts., North; brick, 3 stories, 62x60 ft. and 77x47 ft., pine floors, concrete foundation, Barrett roof; C. N. Nelson, Archt., 1017½ Eagle Ave.\*

Tex., Pharr—Protestant Episcopal Church erecting \$20,000 brick building; R. W. Briggs, Constr. Supervisor.

### City and County

Ala., Birmingham—Jefferson County Board of Revenue, Lacey Edmundson, Pres., let contract for \$100,000 Juvenile Court Detention Home, Elyton, to Day & Sachs, 2400 Avenue E; brick and concrete, 3 stories, built-up roof; Harry B. Wheelock, Archt., Steiner Bank Bldg.\*

Fla., Sanford—City erecting \$15,000 band shell on municipal pier. Address City Commission.

La., Hahnville—Ole K. Olsen, 822 Perdido St., has reinforcing steel contract for St. Charles Parish courthouse alterations; Wm. R. Burk, Archt., Balter Bldg.; J. A. Hasse, Jr., oCntr., 916 Union St., both New Orleans.\*

Okla., Heavener—City Commission and Masonic Bldg. Comm. let contract at \$29,088 to W. P. Gray, Howe, for city hall and Masonic Temple building; plumbing, A. S. Woodward, Heavener, \$666; 3 stories, 50x105 ft., wood and concrete floors, built-up roof; Haralson & Nelson, Archts., Merchants Bank Bldg.\*

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.

## Dwellings

Ala., Birmingham—W. H. Hood, 7933 S. Third Ave., erect brick veneer residence; 1 story, 7 rooms, composition roof; day labor.

Ala., Birmingham—Sam Digesu, 2401 Fourth Ave. N., erect brick veneer residence, 1215 Virginia Ave.; 1 story, oak and tile floors, brick and concrete foundation, cement tile roof; P. S. Mewhinney, Archt., Woodward Bldg.; A. J. Simmons, Contr., 434 Fifteenth St. S. W.

Ala., Birmingham—Julian Dow, 160 S. 12th St., let contract to J. F. Adams, 901 Cotton Ave., for brick veneer residence, Glenn Park; 2 stories and basement, 20x60 ft., slate roof, oak floors, tile baths, steam heat, garage; Warren, Knight & Davis, Archts., 1603 Empire Bldg.\*

Ala., Birmingham—W. B. Foster, Jr., care L. A. Fors, Contr., 2117 First Ave., erecting frame residence, Crestline Heights; 1-story, 5 rooms, composition roof, hot-air heat.

Ala., Birmingham—T. A. Mackle erect \$10,000 residence, 940 Conroy Rd.; brick veneer, 2 stories and basement, 8 rooms, tile roof and bath, oak floors, frame garage; Mackle Shepherd Const. Co., Contr., 910 N. 19th St.

Ala., Birmingham—Mrs. W. S. Terry, 4010 S. Tenth St., erecting \$15,000 residence, Clairmont Ave., near 44th St.; brick veneer 2 stories and basement, 8 rooms, composition shingle roof, oak floors, tile bath, hot water heat; Paul Bros., Contrs., Hollywood.

Ala., Hollywood—M. D. Smith, Jr., 2728 Twelfth Ave. N., Birmingham, let contract for hollow tile and stucco residence to Joe Nobinger, 102 N. Almond St.; 1 story, 50x60 ft., built-up roof, oak and tile floors, steam heat; J. E. Salle, Archt., 2223 Age-Herald Bldg.\*

Fla., Jacksonville—W. F. Catling, 3339 Hedrick St., erect 4 frame dwellings, Wearie St. near Third St.; also 4 on Haines St. near Third St.; 1 story, total cost \$11,200; A. C. George, Contr.

Fla., Madison—John R. Thompson erecting 6-room bungalow, N. Washington and Tooke St.

Fla., Madison—Geo. F. Woelfel erect 8-room stucco and plaster residence, Francis Ave., Lakeland Heights; W. Dupree, Contr.

Fla., Miami—M. S. Altmeyer, 261 N. E. 20th St., let contract for \$20,000 residence, Bay Shore Blvd., to Gunn & Gull, Hahn Bldg.; concrete block, 2 stories, 42x47 ft., oak and tile floors, concrete foundation, Cuban tile roof; furnishings, equipment, etc., \$10,000; Robert A. Chananie, Archt., Realty Board Bldg.

Fla., Monticello—Howard McClellan erecting 6-room bungalow, Palmer Mill Rd.

Fla., Palm Beach—Chas. Manning, Datura Arcade, erecting residence, Clarke Ave.

Fla., St. Petersburg—Dixie M. Hollins, Central Nat. Bank Bldg., erect \$15,000 Spanish type residence and garage, Poplar St. and 16th Ave. N., after plans by H. E. Wendell, Box 1426; L. C. Parker, Contr., 1807 First Ave. S.\*

Fla., Starke—Charlie Johns has contracts for several dwellings at Kingsley Lake near Starke.

Fla., Tavares—Tavares Lumber & Manufacturing Co., M. C. Watson, Pres., erecting 3 dwellings.

Ga., Atlanta—H. H. Ellison, 106 Rumson Rd., erect \$20,000 residence, Habersham Rd.; stucco, 2 stories and basement, tile roof, hardwood floors; Ivey & Crook, Archts., Candler Bldg.; R. T. James, Contr., 901 Healey Bldg.

Ga., Macon—Wm. T. Turlington, 129 Rembert Ave., erect \$10,000 residence, Pio Nono Ave., Stanislaus Circle; English type, brick veneer; Frank Happ, Archt., Fourth Natl. Bank Bldg.; Murphy, Taylor & Ellis, Contrs., 470 Cherry St.

La., New Orleans—Wayne B. Wands, 7605 Elm St., contemplates double cottage, 347-49 Lowerline St.; owner builds.

La., New Orleans—Jos. R. Campbell, 8932 Birch St., contemplates 2 double cottages, Birch and Gen. Ogden Sts.; owner to build in summer.

La., New Orleans—Wm. J. Michon, 220 N. Pierce St., erect \$15,000 building, Iberville and Bienville Sts.; Wm. Wallace, Contr., 131 N. Hagan St.

La., New Orleans—Chas. Monts, 3600 Gentilly Blvd., contemplates double cottage, arigny and Virtue Sts.; owner builds; receiving sub-bids, carpentry work excepted.

Md., Baltimore—E. J. Gallagher Realty Co., Munsey Bldg., erect 34 brick dwellings, 3600

block Kimble St.; 2 stories; total cost \$150,000; owner builds.

Md., Baltimore—Mueller Construction Co., Gunther Bldg., erect 2 brick dwellings and garages, Calvert St. and Southway; 2½ stories, 27x28 ft., 24x30 ft. and 16x20 ft.; slate roofs, hot water heat; Flournoy & Flournoy, Archts., 306 St. Paul Pl.; owner builds.

Miss., Meridian—R. C. Malone, 24th Ave., erecting \$18,000 residence, 23d Ave.; W. G. Wetmore, Contr., 2335 Front St.

Mo., Clayton, St. Louis—Frank Wiget, 3546 S. Grand Ave., erect \$45,000 residence, Carswold subdivision; brick, 2 stories, 66x35 ft.; A. F. Stauder, Archt., 6032 S. Grand Ave., St. Louis; Emil Struckhoff, Contr., 7325 Wellington Ave., University City.

Mo., St. Louis—R. W. Mellow, 3634 Castleman St., erect brick, reinforced concrete and hollow tile residence, Fair Oaks Drive near Clayton, Rd.; 2 stories and basement, 83x70 ft., flagstone terraces, metal lath, cut stone and terra cotta trim, hardwood floors, tile baths, garage; Marcel Boulicault, Archt., 719 Buder Bldg.; bids in.

N. C., Burlington—Burlington Real Estate Co., J. E. Carrigan, Pres., let contracts for 20 dwellings; total cost \$150,000.

Okla., Tulsa—C. A. Mayo, 1413 S. Cheyenne St., let contract to T. B. Merrill for \$75,000 residence; brick veneer, 2 stories and basement, 68x62 ft.; L. E. Blue, Archt., 209 E. 18th St.\*

Tenn., Knoxville—A. L. Chavannes, 115 E. Glenwood St., erecting \$10,000 residence, Glenfield Drive; 27x48.6 ft., oak floors; A. Poulin, Archt., Sherbrooke, Canada; owner building and buying materials locally.\*

Tenn., Knoxville—Fritz Kreis erecting \$12,500 duplex, Lake Ave. and 19th St., West Knoxville; brick veneer, tile roof, marble baths; C. M. Beasley Co., Contr., Deaderick Bldg.

Tenn., Memphis—W. E. White erect brick veneer duplex 267-69 Hawthorne St.; cost about \$10,000; 1-story and basement, 31x51 ft., composition shingle roof, oak floors, tile bath, steam heat, frame garage; J. L. White, Contr., both 1732 Poplar Ave.

Tex., Amarillo—E. B. Treadwell and J. M. Adams, 613½ Polk St., erect \$10,000 dwelling; brick, 2 stories, composition roof, oak floors, gas heat; Y. S. Shepard, Contr.

Tex., Amarillo—Mrs. Charles Woflin erect \$40,000 brick and concrete residence; 2 stories, oak and tile floors, concrete foundations, slate roof; E. F. Rittenberry, Archt., 303 Blackburn Bldg.; Colby & Rongstad, Contrs.\*

Tex., Dallas—Dines Building Co., 1301 Main St., erect \$13,000 dwelling, day labor; brick veneer and stucco, 2 stories, 48x39 ft., 2 tile baths, oak floors, concrete terrace, hot air heat; Bertram C. Hill, Archt., 111 Republic Bank Bldg.

Tex., Greenville—Judge Bruce McMahan erect brick veneer residence, Henry and King Sts.; asbestos roof, built-in plumbing fixtures, tile bath; Lindsey & Kilmer, Archts.; M. S. Reeves, Contr.

Tex., Houston—V. L. Rasmussen, 560 E. Cincinnati Ave., erect \$20,000 dwelling, Park Hill Estates; 2 stories, stucco on Nel-Stone, 10 rooms; Harvey L. Page, Archt., 204 Crescent St.; owner builds.

Tex., Houston—A. M. Bowles, 502 Cotton Exchange Bldg., erecting brick veneer dwelling, 2305 Bins St.; cost about \$10,000; 2 stories and basement, hardwood floors, reinforced concrete foundation, cedar shingle roof and attic; owner builds; hot air heat, Etie Sheet Metal Works, 1509 Washington St.; electrical work, J. R. Fish, Enid St.; plumbing, D. D. Robb, Harrard St.\*

Tex., San Antonio—E. A. Drake, Vance Jackson Rd., near San Antonio, remodeling and erecting addition to residence; cost \$10,000, stone and Nel-Stone; V. L. Rasmussen, Contr., 560 E. Cincinnati Ave.

Va., Richmond—Muhleman & Kayhoe, 108 N. Ninth St., erect about 4 dwellings, Hanover Ave. near Sauer's Lane; cost about \$60,000 each; later erect additional dwellings.

## Government and State

Ala., Birmingham—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., let contract at \$347,500 to Devault & Deltrick, Canton, O., for additional story to post office and courthouse, including mechanical equipment and incidental changes and repairs; brick walls, marble trim, 358x150 ft., composition roof, marble and cork tile floors, steam heat.\*

Fla., St. Petersburg—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Wash-

ington, D. C., let contract for \$60,000 branch post office, Third Ave. N. near Eighth St., to Jackson, Drake & Phipper, Minneapolis, Minn.; contractor to take over option on site, erect building and lease to Government.\*

Md., Pikesville, Baltimore—Maryland National Guard, Milton A. Reckord, Brig. Gen., Maryland Trust Bldg., let contract to C. W. Schmidt, Hearst Tower Bldg., for administration building; stone, terra cotta and stucco, 2 stories and basement, 151x68 ft.; R. L. Harris, Archt., 516 N. Charles St.; J. Hamilton Walker, Engr., 106 E. Pleasant St., all Baltimore.\*

## Hospitals, Sanitariums, Etc.

Fla., Ocala—City Council let contract to Grahm Construction Co., 133½ Magnolia Bldg., Daytona Beach, for \$150,000 Munroe Memorial Hospital; cost \$130,000, 3 stories, 142x36 ft., with 50x36-ft. wings, Massillon bar joists and concrete floors; Geo. MacKay, Archt.; Fredk. Uezell, Asso. Archt., Robertson Bldg.\*

Okla., Enid—J. B. Klein Iron & Foundry Co., 1006 W. Second St., Oklahoma City, has structural steel, miscellaneous and ornamental iron contract for \$50,000 University Hospital addition; also contract for reinforced and structural steel, miscellaneous iron, steel sash and vault door contract for \$20,000 Elks lodge building at Elk City.\*

Tenn., Memphis—Baptist Memorial Hospital, Geo. D. Sheets, Supt., erect \$40,000 garage connection with \$400,000 addition under construction by Kaucher-Hodges Co., Shrine Bldg.; 1 or 2 stories; 40 hotel rooms to be in hospital addition; Pfeil & Awsumb, Archts., Dermon Bldg.\*

Tex., Edinburg—City, A. J. Ross, Mayor, let contract to W. L. Pearson & Co., McAllen and Post-Dispatch Bldg., Houston, for \$390,000 hospital; reinforced concrete and brick, 4 stories, 152x41x63x36 ft., concrete foundation, composition roof; furnishings, equipment, etc., \$150,000; Gleesacke & Harris, Archts., 207 W. Seventh St., Austin; \$306,000 bonds voted.\*

Tex., Sanatorium—State Board of Control, Dr. H. H. Harrington, Chmn., Austin, erecting \$80,000 building at State Tuberculosis Sanatorium; 2 stories, 30.8x212 ft., reinforced concrete, Barrett roof; furnishings, equipment, etc., \$6000; Phelps & DeWees, Archts., Gunter Bldg.; W. E. Simpson Co., Engr., Natl. Bank of Commerce Bldg.; Grandburg & Balzen, Contrs., all San Antonio.\*

## Hotels and Apartments

Fla., Jacksonville—Charles F. Rogers, 408 Atlantic Natl. Bldg., let contract to Neal D. Evans, P. O. Box 2076 Station A, for \$70,000, 2-story, 100x68-ft. apartment building, Riverside Drive between Stockton and Osceola Sts.; white oak floors, reinforced concrete foundation, Cary roofing; Pierce, Butler & Pierce Mfg. Co., 703 E. Ashley St., hot water heating; George Wohlske, 1341 Laura St., plumbing; G. C. Ohme, Archt. (See Machinery Wanted—Incinerators; Mail Boxes).\*

Fla., Miami Beach—M. L. Binder started work on \$200,000, 6-story, 50x160-ft. hotel building on Ocean Drive; 1 passenger and 1 freight elevator, Otis Elevator Co., 235 N. W. Second Ave.; Schmek & Dunkle, Archts.; C. O. Cocheran, Constr. Supt.

Fla., South Jacksonville (Ind. Br. of Jacksonville)—H. H. Tuttle erect \$14,000, Spanish type, 4-apartment house on San Marco Ave., San Marco, for Telfair Stockton Co.

Ky., Louisville—Matz Realty Co., Samuel L. Matz, Willow Terrace Apts., started work on \$500,000, 11-story reinforced concrete, 70x150-ft., fireproof Dartmouth Hotel, corner Willow Ave. and Barringer St.; hardwood flooring, concrete foundation, composition roof; F. C. Clegg & Co., heating and electrical work; Joseph & Joseph, Archts., 800 Francis Bldg.; Wortham Construction Co., Contrs., Starks Bldg.\*

Md., Hagerstown—Dr. E. A. Wareham, 136 W. Washington St., let contract to J. B. Ferguson & Co., 39 W. Washington St., for \$100,000, 3-story, 100x120-ft. brick building, W. Washington St., contain garage, show rooms, 6 offices and 2 apartments; private plans.

Md., Hagerstown—G. U. Bell, 300 N. Potomac St., let contract to Clinton Trovinger, 903 Potomac St., for alterations and addition to apartment building, 306 N. Potomac St.; \$40,000, 2 stories, 42x110 ft., brick; A. J. Klinkhart, Archt., Kohler Bldg.

Miss., Winona—Harry Simmons let contract to Thomas B. Hentz, Maben, for erecting 30-room brick hotel building.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



Mo., Cape Girardeau—E. B. Foster erecting \$30,000, fireproof, brick, reinforced with steel and concrete, 8-family efficiency apartment building, 20 N. Franklin St.; 68½x36 ft., hardwood floors, vapor heating system; L. M. Sarff, Contr.

Mo., Maplewood, St. Louis—Clifford Tausig, 505 S. Gore St., Webster Groves, Mo., erect \$45,000, 3-story, brick, 119.8x28.6 ft. apartment building, 7411-17 Maple St.; owner builds.

Mo., St. Louis—U. Lurie, 3600 S. Grand, erect \$10,000, 41x47x23 ft. store and tenement, and \$10,000, 34x47 ft. tenement, 5700-6 Goerner St.; 2 stories, brick, tar and gravel roof, hot air heat; G. Sokol, Archt.-Bldr., 3608 S. Grand.

Mo., St. Louis—R. R. Rosemond Co., 6115 Gravois St., erect two 35x48-ft. tenements, 5018-24 Mardel St., cost \$18,000; also two \$14,000, 23x46 and 25x46-ft. tenements, 5069-73 and 5068-72 Mardel St.; tar and gravel and tile roofs, hot air and hot water heating; owners are Archts.-Contra.

Tenn., Elizabethton—Dr. J. C. Reynolds erecting 13-suite, brick apartment house, Watauga Ave. and G St.

Tex., Houston—A. H. Hess, 709-11 Louisiana St., let contract to J. C. Whittington for \$16,000, 2-story, brick veneer apartment building, 1105 Hyde Park Blvd., Hyde Park.

Tex., Pampa—Schneider Hotel Corp. let contract to Sharp Bros. Construction Co., 604 O'Rear-Leslie Bldg., Kansas City, Mo., at \$116,890 for construction of 5-story, brick, stone, steel, fireproof, 140x46-ft. hotel building; M. C. Parker, Archt., Ray Bynum Bldg., Amarillo.\*

### Miscellaneous

Fla., Umatilla—Education Board of Southern Baptist Convention let contract to E. E. Burns, De Land, for construction of first unit of building for Baptist winter assembly; include first unit of auditorium to seat 2100, 100x125 ft., brick with stucco finish; have 14 classrooms; Dr. W. H. Battle, Pastor of Baptist Church, Leesburg, member of committee.\*

### Schools

Fla., West Palm Beach—Palm Beach County Board of Public Instruction let contract to John I. Thleme, Delray, at \$129,925 for construction of high school at Jupiter and to Mechanics, Inc., at \$27,997 for construction of Lake Ave. Elementary School.

La., Boyce—Rapides Parish School Board, W. J. Avery, Supt., Alexandria, let contract to Caldwell Brothers, 816 Howard Ave., New Orleans, at \$151,520 for construction of 2-story, brick, reinforced concrete, cast stone trim, fireproof school building; Favrot & Livaudais, Archts., Hibernia Bldg., New Orleans.\*

La., Mansfield—De Soto Parish School Board let following contracts: Oak Grove building, J. M. Brown, 421-25 Lake St., Shreveport, at \$25,520; Mansfield Negro High School, J. N. Neal, Mansfield, at \$10,175; Lula auditorium, J. M. Brown, \$6689; Hunter auditorium, S. B. and B. H. Platt, Grand Cane, at \$6495.

La., Pollock—Grant Parish Board of Education, Colfax, let contract to W. T. Calhoun, Chase-Amman Bldg., Monroe, at \$33,600, for erection of 2-story, brick and hollow tile, 100x115-ft. High School building; edge grain pine flooring, concrete foundation, Barber asphalt built-up roof; C. Scott Yeager, Archt., Alexandria.\*

Md., Hughesville—Charles County Board of Education, La Plata, let contract to Smith Gaskins Co., Walker Bldg., Portsmouth, Va., for construction of school building; heating and plumbing to Dermott Heating Co., 314 Morgan St., Durham, N. C.; Linthicum & Linthicum, Archts., 17 S. Wilmington St., Raleigh, N. C.\*

Miss., Ocean Springs—School Board let contract to Berry & Applewhite, Silver Creek, at \$63,991 for construction of 2-story, brick school building; Wm. T. Nolan, Archt., Canal-Commercial Bldg., New Orleans, La.

S. C., Columbia—School Board, Dr. W. H. Hand, Supt. let contract to W. A. Cray & Son, 1226 Sumter St., at \$50,400, for construction of Shandon School, without the gymnasium; heating to W. B. Guimarin & Co., at \$7306; Lafaye & Lafaye, Archts., 1224 Sumter St.\*

S. C., Columbia—University of South Carolina let contract to George W. Waring, 407 Shandon St., for \$75,000, 3-story, stucco classroom building to be used by Physics and

Engineering departments; J. Carroll Johnson, Archt., Sylvan Bldg.

Tenn., Knoxville—Board of Education, L. H. Spilman, Pres., has let contract to V. L. Nicholson, 102 W. Clinch St., for \$356,835 combination elementary and junior high school in West Lonsdale; 2 stories and basement, brick and concrete, 186x216 ft., Barrett roof, brick and concrete foundation; Warner Service Co., 102 W. Clinch Ave., electrical work; R. F. Graf & Sons, Archts., Journal Bldg.\*

Tenn., Knoxville—Board of Education, L. H. Spilman, Pres., opened bids for erecting Knoxville High School gymnasium, Lamar St. and Fourth Ave.; A. J. Stair & Son, 537 Union St., low bidders at \$48,936, also low bidders for installation of heating and plumbing fixtures at \$15,000; Weaver & McGill, General Bldg., electrical work at \$1259; contracts let; Barber & McMurray, Archts., General Bldg.\*

### Stores

Fla., Fort Pierce—Eugene Hartwig, 43 E. 57th St., New York, and Fort Pierce, let contract to Jackson & Johnson for 50x100-ft., \$15,000, 1-story business building on Orange Ave.\*

Fla., Miami Beach—J. Monfils, Pinetree Drive, erect \$10,000, 1-story, cement block, 50x105-ft. building, 621 Washington Ave.; reinforced concrete foundation; owner is Archt.-Contr.

Fla., Pensacola—W. T. Porter, 1503 E. Jackson St., starting work on \$12,000 concrete, hollow tile and stucco, 60x132½-ft. store building, N. E. 13th and Gadsden Sts.; composition roof; S. J. Welsh, Archt.; owner builds.\*

La., Monroe—George Green let contract to Frank Masling for \$25,000, 2-story, brick store and office building, Harrison and Hall Sts.

Mo., St. Louis—Frank Human, 26 N. Central Ave., let contract to A. H. Stell, 813-A Chestnut St., for \$20,000, 1-story and basement, 35x120-ft. brick store building, Central and Wyndon Aves.; H. W. Guth, Archt., 813-A Chestnut St.

N. C., Asheville—S. H. Kress & Co., Mr. McKey, Building Supt., 114 Fifth Ave., New York, started work on \$500,000, 5-story building at Patton and Lexington Aves.; Bowen Construction Co., Contr.; E. G. T. Huffman, Archt., care owners.

N. C., Wilmington—Henry Heyer, Southern Bldg., erecting building to be occupied by Davids, Incorporated; J. B. Lynch, Archt., Southern Bldg.

Okla., Ardmore—Hugh L. Sturm erecting \$33,000 store and garage building; brick with steel trusses, plate-glass metal setting, metal sash and outside doors; J. B. Klein Iron & Foundry Co., 1006 W. Second St., Oklahoma City, furnishing steel; J. B. White, Archt.

Okla., Chickasha—Strickland Heating & Plumbing Co. received heating and plumbing contract at \$8450 on Hall Briscoe business building; O. C. Coffman, in charge of work.\*

Tenn., Memphis—J. M. Roan erect \$14,000 brick store and 2 apartments, 301-3 Camilla St.

Tex., Dallas—C. P. Keating, 206 Andrews Bldg., let contract to J. R. Mitchell, 6227 Sinex St., at about \$35,000 for construction of 2-story, brick and stone, 107x62-ft. store building; private plans.

Tex., Harlingen—H. H. Buchard erecting business building; R. E. Ewing, Contr.

Tex., Harlingen—H. H. Roddy, Mercedes, start work at once on store and office building; Birger A. Elwing, Archt.; R. E. Ewing, Contr.

Tex., Lubbock—C. N. Hodges let contract to Tom Jackson for \$25,000, 50x115 ft. brick mercantile and hotel building, Main St., between Avenues G and H.

Tex., McAllen—Nassar, Main St., erecting \$42,000, 2-story, masonry, 49x140-ft. store and office building; concrete floors and foundation; A. M. Longoria, 15th St., Archt. and Contr.

Tex., San Antonio—Smith Bros. Development Co., Plaza Hotel, planning construction of 12-story mercantile building, costing \$600,000 to \$700,000, on Bowens Island; Atlee B. & Robt. M. Ayres, Archts., 622 Bedell Bldg.; McKenzie Construction Co., Contr., Travis Bldg.

Tex., San Antonio—Frost Brothers, 221 E. Houston St., let contract to J. E. Dickey, 216 Eleanor St., for \$60,000 third-story addition; Weber Fixture Co., Los Angeles, Cal., will design fixtures; Phelps & Dewees, Archts., Gunter Bldg.

W. Va., Milton—Bank of Milton erecting \$12,000, 2-story, brick and steel, 34x76-ft. store and apartment building; cement foundation, cement and wood floors; Wm. Francis Diehl, Archt., R. & P. Bldg., Huntington; F. E. Wise, Contr., Main St.\*

Tex., Wichita Falls—Voelcker & Dixon, Archts., Kahn Bldg., let following contracts on 2-story, 75x90-ft., brick and reinforced concrete store and office building; General, A. J. Rife Construction Co., 614 Largent St., Dallas, \$34,500; plumbing, Charles Kaufman, 904 Sixth St., \$1689; wiring, Webb Electric Co., 1106 Lamar St., \$945; owner's name not announced.

### Theaters

Ala., Opelika—Agent Singleton Cook of Pepperell Mfg. Co., announced work started on 60x80 ft. brick building to house store and theater.

Md., Baltimore—Marcus Loew Interests, 1540 Broadway, New York, let contract to Northeastern Construction Co., Lexington Bldg., for 3-story and basement, 17x60-ft., fireproof addition to Century Theater at 21 Clay St.; brick walls, reinforced concrete floors and roof, fireproof partitions; basement for extensive refrigeration machinery, upper floors for dressing rooms; John Ebersson, Archt., 212 E. Superior St., Chicago, Ill.\*

Va., Roanoke—Sun Investment Co., Elmore D. Heins, Pres., 5 Campbell Ave. North, let contract to D. J. Phipps, Boxley Bldg., for \$500,000, 4-story, terra cotta and tile theater building, cor. Jefferson St. and Kirk Ave.; seat 2500 to 3000 persons, refrigerating system, 4 storerooms facing Jefferson St., \$25,000 pipe organ; Smith & Tardy, Archts., 112 Kirk Ave. W. (Plans for 23-story theater and office building abandoned.)\*

W. Va., Moundsville—Ferris Brothers let contract to Don J. Byrum Co., Inc., Wheeling, for construction of 109x48-ft. theater and apartment building; seat about 700 people; second and third story contain 8 apartments; electric wiring to Erb Electric Co., 1414 Eoff St.; heating and ventilating to A. W. Acres Plumbing Co.; M. F. Giesey, Archt., Riley Law Bldg., all Wheeling; theater has been leased to Mound City Theater Co., James Velas, Pres.

### Warehouses

Ala., Birmingham—Kirkpatrick Sand & Cement Co., 318 N. 21st St., let contract to Earl Cline, 1011 N. 18th St., for \$60,000, 1-story, steel and concrete, 250x50 ft. warehouse, Second Ave. and 30th St.; Denham, Van Keuren & Denham, Archts., Age-Herald Bldg.\*

Fla., Jacksonville—Florida Casket Co., Duval and Palmetto Sts., erecting \$25,000, 3-story, 50x100-ft., brick and frame building; wood floors, concrete foundation, built-up roof; equipment and furnishings cost \$3500; Chapman & Walker, 12 W. Beaver St., plumbing; O. L. Florrid, 513 Riverside Ave., electrical work; Otis Elevator Co., 225 Liberty St., elevators; Olaf Holmes, Archt., 135 E. Bay St.; W. T. Hadlow, Contr., 32 W. Forsyth St.\*

Ky., Louisville—George T. Smith, 1895 Princeton Drive, erecting \$30,000, 1-story, hollow tile, 120x370-ft. storage building, 13th and Burnett Sts.; wood floors, concrete foundation, Carey roof; H. G. Whitenberg, Archt.-Contr.\*

N. C., Charlotte—Southern Power Co., 4328 S. Church St., erect \$30,000, 1-story, 54x320-ft. brick building, Post St., for storage of supplies.

Tenn., Memphis—James and John Canale, 405 S. Front St., let contract to H. A. McGuire & Co., Dermon Bldg., at \$65,000, for construction of 3-story mill, 75x170 ft. wholesale grocery building, S. Front St.; Banks Grocery Co., 421 Main St., lessee; oak floors, concrete foundation, composition roof; Harker & Cairns, Archts., Court Square Bldg. (See Machinery Wanted—Building Materials.)\*

Tex., Houston—The Schumacher Co., 1209 Commerce St., let contract to Southwestern Construction Co., West Bldg., at \$459,000 for erection of 8-story, brick and reinforced concrete, 154x130-ft. warehouse; concrete roofing, piling foundation; equipment and furnishings cost \$15,000; plans by Charles E. Washburn, Civil Engr., Keystone Bldg. (See Machinery Wanted—Incinerators; Mail Chutes; Sprinkler System.)\*

Tex., San Angelo—Wool Growers' Central Storage Co. let contract to Carter & Hall at \$27,000 for construction of 120x174-ft. warehouse.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.

# MACHINERY, PROPOSALS AND SUPPLIES WANTED

**Air Compressor.**—Hackley Morrison Co. (Mchy. Dealer), 1708 Lewis St., Richmond, Va.—Wants one 10x12x12 air compressor.

**Amber Beads.**—J. T. Wyatt, Route No. 3, Box 10, Salisbury, N. C.—Wants to purchase pure amber beads, correspond with wholesale dealers.

**Asbestos Millboard and Mineral Wool.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 11 to furnish 50 sheets of asbestos millboard and 2500 lbs. mineral wool; delivery Quantico, Va. Sch. 350.

**Bake Oven.**—Guyan Machine Shops, Logan, W. Va.—Wants bake oven for large armatures; natural gas or electric heat.

**Blackboards.**—R. F. Ball Construction Co., Brenham, Tex.—Wants prices on slate blackboards 3-16 inch thick.

**Boiler.**—Hyland-Stamford Co., Murphy Arcade, Orlando, Fla.—Wants 30-40 h.p. horizontal boiler, low pressure; locomotive type preferred.

**Boiler.**—Guyan Machine Shops, Logan, W. Va.—Wants about 60 h.p. boiler, H. R. T., with stack and all fittings.

**Boilers.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 14 to furnish 3 boilers, fire box heating type; delivery Parris Island, S. C., Sch. No. 360.

**Boiler.**—See Cableway Hoist.

**Boilers.**—Hackley Morrison Co., Inc. (Mchy. Dealer), 1708 Lewis St., Richmond, Va.—Wants one 30-40 h. p., 125-lb. pressure fire-box boiler; one 30-40 h. p., 125-lb. pressure Scotch boiler.

**Boxes.**—United Talc & Crayon Co. Inc. Glendon, N. C.—Wants prices on locked corner slip cover boxes in sizes 5¼x6¾x3¾ in. deep and ¼ in., and 5¼x3¾x3¾ in., thick pine, all inside measurements, in quantities of 1000 to 10,000.

**Brake-Lining Equipment.**—See Garage Equipment, etc.

**Brake (Automobile) Testing Equipment.**—See Garage Equipment, etc.

**Bridge.**—Louisiana Highway Comm., Raymond Bldg., Baton Rouge. See Bridges, Culverts and Viaducts—Proposed Construction.

**Bridge.**—State of Florida will build 4 bridges. See Construction News—Roads, Streets, Paving.

**Bridge.**—Sanford, Fla., will build 6 bridges and 12 culverts. See Construction News—Roads, Streets, Paving.

**Bridge.**—State of South Carolina will build 19 bridges. See Construction News—Roads, Streets, Paving.

**Bridge.**—State of Alabama will build 4 bridges. See Construction News—Roads, Streets, Paving.

**Building Materials.**—Warren, Knight & Davis, 1603 Empire Bldg., Birmingham, Ala.—Wants prices on hollow and interior tile, metal doors, steel sash, tile and hardwood flooring, marble, limestone for dwelling.

**Building Materials.**—N. W. Overstreet, Archt., Miss. Fire Ins. Co. Bldg., Jackson, Miss.—Wants prices on terrazzo, wood block, rubber tile and composition flooring, marble, cast stone, limestone and terra cotta trim for \$31,600 store building.

**Building Material.**—B. W. Casey, Twenty-second St., Lubbock, Tex.—Wants prices on hollow tile, terra cotta trim, composition and tile roofing and hardwood flooring for \$5000 residence.

**Building Materials.**—Jake Schwartz, Chmn. Board of Education, Uvalde, Tex.—Wants prices on metal ceilings and steel sash and trim for school building.

**Building Material.**—A. M. Bowles, 502 Cotton Exchange Bldg., Houston, Tex.—Wants prices on steel sash and hardwood flooring for \$9500 dwelling.

**Building Material.**—Gude & Co., Inc., Jacksonville, Fla.—Wants prices on hollow and interior tile, metal ceilings and cast stone for \$14,000 library.

**Building Materials.**—J. I. Dorsey, Fenwick, W. Va.—Wants prices on hollow and floor-tile, hardwood and linoleum flooring, composition roofing and marble for store building.

**Building Materials.**—F. B. Shepherd, Fiscal Agent, Abilene Christian College, Abilene, Tex.—Wants prices on hollow, interior and flooring tile, metal doors, steel sash and trim, wire glass, plaster board, tile and hardwood flooring, composition roofing, vaults, marble, cast stone and limestone for \$150,000 building.

**Building Materials.**—Maurice J. Sullivan, Archt., Second Natl. Bank Bldg., Houston, Tex.—Wants prices on hollow tile, steel sash, terrazzo flooring, roofing tile, cast stone, limestone for chapel at St. Mary's University, LaPorte.

**Building Materials.**—L. V. Trueman, Milton, Fla.—Wants prices on steel sash and trim, plaster board, composition roofing, tile roofing, ventilators, cast stone and terra cotta trim for dwellings.

**Building Materials.**—H. A. McGuire & Co., Contrs., Derman Bldg., Memphis, Tenn.—Wants prices on metal doors, steel sash and trim, wire glass, hardwood flooring, composition roofing and cast stone for \$75,000 warehouse.

**Building Materials.**—N. W. Overstreet, Archt., Miss. Fire Insur. Co. Bldg., Jackson, Miss.—Wants prices on hollow tile, steel sash and trim, rolling partitions, composition roofing, ventilators and cast stone for \$77,000 practice school building at State Normal College, Hattiesburg.

**Building Materials.**—J. W. Smith, Archt., Ouachita Bank Bldg., Monroe, La.—Wants prices on metal ceilings, composition roofing and cast stone for \$35,000 school, Dodson.

**Building Material.**—E. Floyd Redding, 506 Tabor Bldg., Denver, Colo.—Wants prices on hollow tile, metal ceilings, steel sash and trim, wire glass, composition roofing, ventilators, marble and tile, hardwood and linoleum flooring for \$20,000 bank, La Feria, Tex.

**Cable.**—See Traffic Equipment.

**Cableway Hoist, etc.**—The Harford Talc Co., Inc., 1801 Chelsea Road, Baltimore, Md.—Wants cableway hoist with boiler; 3000 ft. of galvanized guy cable; must be in good condition.

**Canning Machinery.**—E. C. Matthews, Blackville, S. C.—Wants data and prices on machinery for small canning plant.

**Canning Machinery.**—Sumter County Chamber of Commerce, Bushnell, Fla.—Wants data and prices on machinery for small canning plant.

**Canning Plant.**—Tallulah Orchards Corp., C. J. Haden, Pres., 517 Grant Bldg., Atlanta, Ga.—Wants moderate size canning plant for canning apples.

**Celluloid Sheets.**—U. S. Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 13 for 35 sheets celluloid for automobile storm curtains, in sheets 20x50 in.

**Cement.**—South Carolina State Highway Dept., Ben. M. Sawyer, Commrs., Columbia, S. C.—Receives bids Jan. 13 to furnish cement for road work.

**Chairs (Folding).**—U. S. Veterans Bureau, Supply Division, Washington, D. C.—Receives bids Jan. 10 for 200 folding chairs, upholstered seat; Colson's "Solid Comfort" or equal.

**Cinder-Concrete Block Machinery.**—Porter-Roberts Real Estate Co., 800 Vandiver Bldg., Montgomery, Ala.—Wants to correspond with manufacturers of machinery for making cinder-concrete blocks.

**Compression Testing Machine.**—The France Stone Co., 1800 Second Natl. Bank Bldg., Toledo, Ohio—Wants one 200,000-lb. capacity, used compression testing machine, either hydraulic or gear-driven type, recording stress on a beam.

**Concrete Block Machinery, etc.**—L. V. Trueman, Milton, Fla.—Interested in concrete block-making machinery and concrete mixers.

**Concrete Mixer.**—See Concrete Block Machinery, etc.

**Cottonseed-Oil Mill.**—A. J. Simonton, of the Jackson Parish Bank, Jonesboro, La.—Wants data and prices on small cotton-seed mill; state type, capacity and complete specifications.

**Dredging, etc.**—United States Engineer office, Room 710, Armu Bldg., 39 Whitehall St., New York City, N. Y.—Receives bids Jan. 20 for dredging and rock removal in East River.

**Electric Drill Grinder, etc.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 10 to furnish electric twist drill grinder, electric bench grinder, 4 wire brush wheels, 4 rag buffing wheels; delivery Quantico, Va. Sch. 348.

**Electric Refrigerators.**—J. I. Dorsey, Fenwick, W. Va.—Wants prices on electric refrigerators for store building.

**Electric Refrigerators.**—Warren, Knight & Davis, 1603 Empire Bldg., Birmingham, Ala.

—Wants prices on electric refrigerators for dwelling.

**Engine.**—Dendinger, Inc., Box 1450 New Orleans, La.—Wants to purchase second-hand Corliss engine; approximately 20x42 ft.; give full and complete description, condition, shop number, age, location and price.

**Engine.**—John G. Moore, White Pine, Tenn.—Wants to contract for manufacture of (patented) air-cooled gas engine.

**Excelsior Machines.**—Georgia Cushion and Wrapper Co., Woodland, Ga.—Wants to purchase Kline excelsior machine; second-hand equipment.

**Fertilizer Machinery.**—A. J. Simonton, the Jackson Parish Bank, Jonesboro, La.—Wants complete data and prices on small fertilizer plant; state data and complete specifications.

**Fire Alarm System.**—U. S. Veterans Bureau, Room 791, Arlington Bldg., Washington, D. C.—Receives bids Jan. 25 for fire alarm system at U. S. V. Hospital No. 86, Sheridan, Wyo.

**Fire Hose.**—U. S. Veterans Bureau, Supply Division, Washington, D. S.—Receives bids Jan. 12 for 300 feet of 2½-in. fire hose.

**Flooring.**—L. E. Fite & Co., Robt. E. Lee Hotel Bldg., San Antonio, Tex.—Wants prices on hardwood and linoleum flooring for dwellings.

**Flooring (Hardwood).**—R. F. Ball Construction Co., Brenham, Tex.—Wants prices on hardwood flooring.

**Forge Blowers.**—Guyan Machine Shops, Logan, W. Va.—Want forge blowers for 110 and 220 volts A.C.

**Garage Equipment, etc.**—Fisher Automotive Service Corp., Whittier and Delmar Sts., St. Louis, Mo.—Wants prices and data on automobile brake-lining equipment, automobile brake-testing equipment, wheel liners, etc.

**Generator (Electric), etc.**—W. B. Doak, Clifton Station, Va.—Wants new or good second-hand 60 h. p. A. C. generator, with friction clutch, for new 60 h. p. Fairbanks-Morse oil engine, and 100 h. p. A. C. generator for waterwheel, overshot type; give price, condition, etc.

**Gravel.**—W. E. Atkinson, Chmn. Louisiana Highway Comm., Raymond Bldg., Baton Rouge, La.—Receives bids Jan. 13 to furnish approximately 2000 cu. yds. washed and screened gravel, f. o. b. cars at Pollack, La., for surfacing Federal Aid Project 164-A, Grant Parish, Pollack-Jena Highway; W. B. Robert, State Highway Engr.

**Gravel.**—Colfax, La. See Construction News—Roads, Streets, Paving.

**Gravel.**—Arcadia, La. See Construction News—Roads, Streets, Paving.

**Gravel.**—W. F. Henson, Clk., Ripley, Miss.—Receives bids Jan. 11 for 165 tons gravel, pit run.

**Grinding (Carborundum) Machinery.**—The Texas-Neches Tile Co., 670 Sabine Pass Ave., Beaumont, Tex.—Wants information on machines to hold fancy shapes of carborundum stones to be used in getting out bases, capping, etc.

**Handle (Mop) Machinery.**—See Woodworking Machinery.

**Heating System.**—U. S. Veterans Bureau, L. H. Tripp, Chief, Construction Div., Washington, D. C.—Receives bids Jan. 18 for heating systems for bungalows at U. S. V. Hospital, Muskogee, Okla.

**Hoist.**—The Cable Excavator Co., Inc. (Mchy. Dealer), Second and Railroad Ave., Fernwood, Delaware County, Pa.—Wants 2-speed electric, 100 h. p. hoist, suitable for dragline.

**Home Lighting Plant.**—Cape Fear Supply Co., Williams St. Fayetteville, N. C.—Wants to correspond with manufacturers of lighting plants for farm-lighting purposes.

**Ice Plant.**—R. A. Jones, Adel, Ga.—Wants to correspond with persons interested in establishing ice plant.

**Incinerators.**—Neal D. Evans, Contr., P. O. Box 2078 Station A, Jacksonville, Fla.—Wants prices on incinerators for \$70,000 apartment building.

**Incinerators.**—Southwest Construction Co., West Bldg., Houston, Tex.—Wants prices on incinerators for \$480,000 warehouse.

**Incinerators.**—Warren, Knight & Davis, 1603 Empire Bldg., Birmingham, Ala.—Wants prices on incinerators for dwelling.

**Lathe.**—See Machine Tools.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



**Loop Winder.**—Electric Service Co., Inc., 317 Sixteenth St., Ashland, Ky.—Wants prices on loop winder.

**Machine Tools.**—Guyan Machine Shops, Logan, W. Va.—Wants lathe about 36x14 in.; preferably with single-pulley drive; milling saw, capacity 9-in. round.

**Mail Boxes.**—Neal D. Evans, Contr., P. O. Box 2076 Station A, Jacksonville, Fla.—Wants prices on mail boxes for \$70,000 apartment building.

**Mail Chutes.**—J. I. Dorsey, Fenwick, W. Va.—Wants prices on mail chutes for store building.

**Mail Chutes.**—Southwestern Construction Co., West Bldg., Houston, Tex.—Wants prices on mail chutes for \$480,000 warehouse.

**Metal Ceilings.**—C. B. Wood, Harlingen, Tex.—Wants prices on metal ceiling for automobile sales building.

**Milling Saw.**—See Machine Tools.

**Miscellaneous Supplies.**—Marine Corps, Quartermaster's Dept., Washington—Receives bids Jan. 11 for 150 lbs. Babbitt metal, 50 acetylene gas burners, 6 oil measures, 75 scoop shovels, 20 lbs. welding compound, etc.; delivery Quantico, Va., Sch. o. 351.

**Miscellaneous Supplies.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 13 to furnish miscellaneous supplies; delivery Quantico, Va. Sch. No. 357.

**Miscellaneous Supplies.**—Panama Canal, A. L. Flint, General Purchasing Officer, Washington, D. C.—Receives bids Jan. 19 to furnish sash-operating devices, screws, milling cutters, anchors, cable clips, locks, hinges, butts, hasps, door hooks, chain links, pulleys, shackles, barrel and foot bolts, ring bolts, eye bolts, sash chain and cord, tires, inner tubes, storage batteries, magnetos, speedometers, spark plugs, copper sulphate, plumbers' furnaces, file handles, etc. Blank forms and information (Circular 1777) on application to offices of Panama Canal; Asst. Purchasing Agents at 24 State St., New York City; 611 Gravier St., New Orleans, La.; Fort Mason, San Francisco, Cal.; also from U. S. Engineer offices throughout country.

**Motors.**—Guyan Machine Shops, Logan, W. Va.—Wants 2 up to 20 h.p. A.C. and D.C. motors; 3 squirrel-cage motors, 15 h.p., 3-phase, 220-volt, 60-cycle, with starters and rails; preferably G. E.; 200 r.p.m.; also 2 h.p. Crocker-Wheeler motor, D. C., 1200 r.p.m., 230-volt.

**Motor.**—Hackley, Morrison Co., Inc., (Mchy. Dealer), 1708 Lewis St., Richmond, Va.—Wants one 110-volt, 7½ h.p., D. C., bare motor, speed 1100-1200 r.p.m.; no other speed can be used.

**Motor Dredge Tender.**—U. S. Engineer Office, Norfolk, Va.—Receives bids Jan. 20 to construct one 35-ft.x9-ft.x4-ft.-1-in. motor dredge tender.

**Novelties.**—Wm. T. Gregory, Stovall, N. C.—Wants catalogs and prices of all kinds of novelties; correspond with manufacturers.

**Ornamental Concrete Products Forms.**—The Texas-Neches Tile Co., 670 Sabine Pass Ave., Beaumont, Tex.—Wants complete data and prices on making of pottery, flower urns, vases, etc.

**Paint and Brushes.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 10 to furnish paint and brushes; delivery Quantico, Va. Sch. No. 347.

**Paving.**—See Water Works and Sewers, etc.

**Paving.**—Tavares, Fla.—See Roads, Streets and Paving—Proposed Construction.

**Pipe (Cast Iron).**—See sewers.

**Pipe (Concrete).**—See Sewers.

**Pipe (Vitrified Clay).**—See Sewers.

**Pipe (Cast Iron).**—See Water Works.

**Pipe (Gas).**—Shahinian Brothers, P. B. 53, Aleppo, Syria.—Wants to purchase 2 to 6 in. gas pipe; second-hand; state condition and price.

**Planer.**—See Woodworking Machinery.

**Printing and Binding.**—Supreme Court of Missouri, J. D. Allen, Clerk, Jefferson City, Mo.—Receives bids Jan. 31 for setting type, making and furnishing stereotype matrices and plates, furnish paper and binding materials, printing and binding, distributing and storing reports of the Supreme Court and Court of Appeals of State of Missouri. David E. Blair, Chief Justice.

**Pulleys and Shafting.**—Guyan Machine Shops, Logan, W. Va.—Wants pulleys, split steel, up to 36x8; also cold-rolled shafting up to 4 7-16 in. diam.

**Pumping Station.**—See Sewers.

**Pumps.**—See Water Works and Sewers, etc.

**Pumps.**—See Sewers.

**Pumps (Centrifugal).**—Shahinian Brothers, P. B. 53, Aleppo, Syria.—Wants to purchase centrifugal pumps from 2 to 12 in. size, second-hand; state condition and price.

**Pumps (Dredge).**—W. S. Fallon Co., W. S. Fallon, 326 Union Bldg., 1836 Euclid Ave., Cleveland, Ohio.—Wants two 16 or 18 in. dredge pumps; prefer good used, steam-driven units.

**Punch and Slitting Shear.**—Guyan Machine Shops, Logan, W. Va.—Wants prices on punch and slitting shear for ¼-in. plate.

**Radio Equipment.**—Southern Storage Battery Co., 20 E. Davie St., Raleigh, N. C.—Wants to act as distributors for full line of radios and radio equipment, covering all eastern North Carolina territory.

**Rails.**—Machinery Record, Box 733, 1207 Mutual Bldg., Richmond, Va.—Want 30 tons of 100-lb. first-class relay rails; delivery Washington, D. C.

**Reservoir.**—See Water Works.

**Road.**—State of South Carolina will build 12 roads. See Construction News—Roads, Streets, Paving.

**Road.**—State of Florida will build 6 roads. See Construction News—Roads, Streets, Paving.

**Road.**—Houston, Tex., will improve 2 roads. See Construction News—Roads, Streets, Paving.

**Road.**—Colfax, La. See Construction News—Roads, Streets, Paving.

**Road.**—Franklin, La., will build 2 roads. See Construction News—Roads, Streets, Paving.

**Road.**—Arcadia, La. See Construction News—Roads, Streets, Paving.

**Road.**—Jena, La. See Construction News—Roads, Streets, Paving.

**Road.**—Sanford, Fla. See Construction News—Roads, Streets, Paving.

**Road.**—Natchitoches, La. See Construction News—Roads, Streets, Paving.

**Road.**—State of Alabama will build 4 roads. See Construction News—Roads, Streets, Paving.

**Rolling Partitions.**—B. W. Casey, 22nd St., Lubbock, Tex.—Wants prices on rolling partitions.

**Rubber Gaskets.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Receives bids Jan. 11 to deliver rubber gaskets to Naval Powder Factory, Indian Head, Md.; also front casting plate and butt straps to U. S. S. Eagle, No. 56, Baltimore, Md.

**Sand-Blast Equipment.**—The Texas-Neches Tile Co., 670 Sabine Pass Ave., Beaumont, Tex.—Wants prices and information on small sand-blast outfits to put fine finish on cement products.

**Septic Tanks.**—See Water Works and Sewers, etc.

**Sewers.**—City of Winter Park, Fla., C. Fred Ward, Mayor—Receives bids Feb. 9 for 300 ft. of 24-in. cast-iron pipe, Class A on piers; 24 and 21 in. clay or concrete sewers; 200 ft. 16 in. cast-iron pipe, Class A siphon; 625 ft. of 12-in. clay or concrete sewers; clay or concrete Wye's 94 manholes; 33 bush tanks; 40,000 ft. b.m. timber foundation; 20 cu. yds. Class A concrete; 150 cu. yds. Class C concrete; 1 pumping station complete; 2 direct connected centrifugal pumps and motors; 1 Imhoff tank and accessories; 600 ft. of 18-in. clay or concrete sewers; N. A. Hotard, Engr., New Smyrna.

**Sewers.**—See Water Works and Sewers, etc.

**Shafting (Steel).**—See Pulleys and Shafting.

**Sidewalk.**—Kenner, La. See Construction News—Roads, Streets, Paving.

**Silo.**—Ensley Builders Supply Co., 1915 Avenue E, Ensley, Ala.—Wants data and prices on silos for sand and gravel business; wants to correspond with firms handling this equipment.

**Soap Powder.**—Marine Corps, Quartermaster's Dept., Washington D. C.—Receives bids Jan. 12 to furnish 12,000 lbs. soap powder; delivery Quantico, Va., Sch. No. 352.

**Sprinkler System.**—H. A. McGuire & Co., Contrs., Derman Bldg., Memphis, Tenn.—Wants prices on sprinkler system for \$65,000 warehouse.

**Sprinkler System.**—Southeastern Construction Co., West Bldg., Houston, Tex.—Wants prices on sprinkler system for \$480,000 warehouse.

**Steel, etc.**—Guyan Machine Shops, Logan, W. Va.—Wants steel up to 5 in. round, .030 to .045 carbon; steel plates ¼ up to 1½ in. thick; angles up to 8x8x½.

**Street.**—Ripley, Miss. See Construction News—Roads, Streets, Paving.

**Tank and Tower.**—See Water Works and Sewers, etc.

**Telephone (Intercommunicating) System.**—The White Furniture Co., J. S. White, Sec., Mebane, N. C.—Wants prices on factory system of intercommunicating telephone; about six phones in different parts of plant.

**Tractor.**—Harris County, H. L. Washburn, County Auditor, Houston, Tex.—Receives bids Jan. 10 for 5-ton tractor.

**Traffic Signal Equipment.**—B. H. Bridges, City Clerk, Tallahassee, Fla.—Receives bids Jan. 11 for 4 traffic control stop and go signals on pedestal mounting, equipped with four-way stop, caution and go lights, and works, each signal equipped with bells, remote control switches, panel equipped for eight signals for synchronous operation and emergency control on switchboard; 3250 ft. traffic control cables, to be installed with the lights; Wm. R. Galt, City Mgr.

**Truck (Automobile) Chassis.**—Harris County, H. L. Washburn, County Auditor, Houston, Tex.—Receives bids Jan. 10 for 12 one-ton truck chassis.

**Tug.**—U. S. Engineer Office, Mobile, Ala.—Receives bids Jan. 7 to construct and deliver one 100-ft. Diesel-electric harbor tug.

**Umbrella Materials.**—Rainy Day Umbrella Co., Walter J. Corneliuss, 1231 N. Gay St., Baltimore, Md.—Wants to correspond with manufacturers of cloth and silk for making umbrellas.

**Underpass.**—Greensboro, N. C. See Bridges, Culverts and Viaducts—Proposed Construction.

**Vaults.**—J. I. Dorsey, Fenwick, W. Va.—Wants prices on vaults for store building.

**Vaults.**—E. Floyd Redding, 506 Tabor Bldg., Denver, Colo.—Wants prices on vaults for \$20,000 bank, La Feria, Tex.

**Ventilators.**—N. W. Overstreet, Archt., Miss. Fire Ins. Co. Bldg., Jackson, Miss.—Wants prices on ventilators for \$31,600 store building.

**Warp (Carpet).**—U. S. Veterans Bureau, Supply Division, Washington, D. C.—Receives bids Jan. 6 for 200 lbs. dark blue carpet warp.

**Waterwheel.**—See Generators, etc.

**Water Works and Sewers, etc.**—Board of Bond Trustees, Cedar Key, Fla., H. B. Rogers, Sec.—Receives bids Jan. 25 for water works, sewers and pavement improvements, including system of shallow wells, masonry reservoir, elevated steel water tank, pumping station, water-works distribution system, water-works and sewage pumps, septic tanks, sewage-collecting system, pavement of asphalt or cement or bituminous concrete and all accessories; Main Engineering Co., Inc., Engrs., 112 Baker St., Daytona Beach, Fla.

**Water Works.**—City of Childress, Tex., J. E. Baker, Sec.—Receives bids Jan. 12 for water-works improvements, including earthen storage reservoir, brick lined; 4 miles pipe line, addition and improvements water-treatment plant at Lake Childress. Approximate quantities are: 350 ft. of 20-in. Class A cast iron pipe, 5400 ft. of 16-in. Class A cast iron pipe, 14,000 ft. of 14-in. Class A and B cast iron pipe, brick lined earthen reservoir, capacity 1,525,000 gal.; concrete sedimentation basin with necessary dry feed chemical machines and alterations to present piping at plant; Frank F. Du Bose, Consult. Engr., Childress.

**Wheel Liners.**—See Garage Equipment, etc.

**Woodworking Machinery.**—W. H. Bone, Jr., Douglas, Ga.—Wants machines to make mop and broom handles.

**Woodworking Machinery.**—G. W. Simmons Co., 605 Linden Ave., Memphis, Tenn.—Wants a good Woods or American 42-in. diagonal door planer, used, in good condition, immediate shipment, state price; also Climax bottom rounder, single or double-head corrugated fastener driver; Saranac preferred.

**X-ray Equipment and Supplies.**—U. S. Veterans Bureau, Supply Division, Washington, D. C.—Receives bids Jan. 3 for X-ray equipment and supplies.

**Zeolite Water Softening Plant.**—U. S. Marine Corps, Quartermaster's Dept., Washington, D. C.—Receives bids Jan. 12 to furnish one zeolite, 2 unit, pressure type water softening plant; delivery Parris Island, S. C. Sch. No. 353.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Climax Exhibit at Road Show.

The Climax Engineering Company, Clinton, Iowa, will display a complete line of Climax "Trustworthy" engines at the Chicago Road Show next week. Each of its well-known models will be on exhibition. The booths, W11 and 12, will be in charge of Lorimer Dunlevy, sales manager, and he will be assisted by M. E. Collins, service manager, and Sales Representatives R. B. Sincock, T. L. Keeling and F. E. Blanchard. Among the engines will be the Model "TU," used in so many well-known makes of cranes, shovels, ditchers and similar types of road-building machinery. This is a four-cylinder, 5½ by 7 inch engine, which develops 77 horsepower at its maximum speed. The Model "KU," four-cylinder, 5 by 6½ inch engine will also be exhibited, and both the Models "R4U" and "R6U" engines will be shown. These models are made in four and six cylinders, having a six-inch bore and seven-inch stroke. Following its plan of last year, the Climax Engineering Company, Clinton, Iowa, will present visitors at its booth with red carnations.

### Joseph S. Helm Receives Promotion.

In accordance with reorganization plans recently perfected by the Standard Oil Company of New Jersey, Joseph S. Helm, manager of the asphalt department of the Standard Oil Company of Louisiana and located at New Orleans, becomes general manager of asphalt sales at home and abroad for the Standard Oil Company of New Jersey. C. G. Sheffield, until recently in charge of the asphalt department, Standard Oil Company of New Jersey, has been placed in charge of sales in the lubricating department. Under Mr. Helm all the asphalt sales work of the New Jersey company will be centered at 26 Broadway, New York city. With his transfer to the lubricating-oil department as manager of sales, Mr. Sheffield retires January 13 as president of the Asphalt Association, a position in which he has served the asphalt industry most effectively for the past two years. He is a native of Kentucky.

### Whitney Metal Tool Company Change of Machine.

The Whitney Metal Tool Company, Rockford, Ill., has announced a change in its No. 51 bender, which is a unit of its No. 455 combination machine, so that it will bend the leg of the angle in either direction, inside or outside, which, it is remarked, is a new and important feature when doing ventilating or blow-pipe work. The operating handle is now made from a malleable-iron casting to prevent the possibility of breaking the handle. It is stated that it is only a moment's job to match and bend a 2 by 2½ angle iron with this complete unit. The company will send printed matter on request.

### Chase Cars for Brick Plants.

The Chase Foundry and Manufacturing Company, Columbus, Ohio, furnished the cars for the Lakeland (Fla.) sand-lime plant of the Lakeland Brick and Tile Manufacturing Corporation, described in the MANUFACTURERS RECORD of December 2. The company also has received an order for cars to be used in the new plant now being built at Holland, Fla., by the Lakeland company.

### Diamond Manufacturing Company Branch in New York.

The Diamond Manufacturing Company of Wyoming, Pa., on December 1 opened a factory office at 1819 Broadway, New York city, in the charge of Walter A. Ramsey, factory representative, to take care of customers' requirements in perforated metal screens and grilles.

### F. C. Wilcox Now With Chain Belt Company.

F. C. Wilcox, for 18 years president of the Foote Concrete Machinery Company of Chicago, Ill., has joined the Chain Belt Company of Milwaukee, Wis., as Eastern manager of Rex Paver Sales. With headquarters in New York city, he will manage the distribution of the machines in the Eastern and New England States. Sales of these pavers have grown so rapidly throughout the East that it became necessary to increase the company's New York warehouse stock and establish Mr. Wilcox permanently at the New York office. The Chain Belt Company, which has been a manufacturer of concrete mixers and pavers since 1908, is erecting a large engineering plant as an addition to the three groups now on its new 50-acre tract at the West Milwaukee works.

### Box Corporation Changes.

The Box Crane and Hoist Corporation (formerly Alfred Box & Co. (Inc.), Philadelphia, Pa., has adopted a new sales policy, which went into effect December 1. The crane and electric hoist business is now in two separate divisions. The crane business will be, as heretofore, under the direction of G. A. Mitchell, secretary and general sales manager, and the electric-hoist division will be under the supervision of R. H. McGredy, with the title of sales manager of the electric-hoist division; he was formerly general sales manager of the Sheperd Electric Crane and Hoist Company. To provide better service and extend the scope of the engineering department as to sales, it is contemplated to open direct factory branches in the principal industrial centers, the first of the offices being opened December 1 at Room 1649 Strauss Building, 310 South Michigan avenue, Chicago, where R. J. Wadd, former chief engineer of the Sheperd Electric Crane and Hoist Company, is in charge.

### Harry M. Giles.

Harry M. Giles, general superintendent of the South Philadelphia plant, Westinghouse Electric and Manufacturing Company, died on December 14 at the Hotel Dennis, Atlantic City, N. J., from heart trouble. Funeral services were held December 17 at Swarthmore, Pa. Interment was made at Providence, R. I. Mr. Giles, who was 57 years of age, had been associated with the Westinghouse Company since 1900. He was well known in the marine and power industry, beginning his business career with the Corliss Steam Engine Company of Providence, where he was employed from 1886 to 1893. Then he joined the Calumet and Hecla Mining Company as chief engineer, remaining with them until going to the Westinghouse Company as superintendent of the Corliss engine department. Later he was promoted to marine superintendent, and in 1919 was transferred to the South Philadelphia plant as its general superintendent.

### McCloskey "Bomb Shell" Torches.

The McCloskey Torch Company is manufacturing the "Bomb Shell" torches, patented December 14, 1926, its address being 3343 Collingwood avenue, Toledo, Ohio. This device is so named because of its shape, which resembles a bomb shell of the spherical type. It is used for night marking of danger spots on highways, railways, etc.; for instance, where there may be trenches dug or road repairs in progress or else track construction. The torches are equipped with wick and are ready for instant use. A circular gives full information, with pictures.

### A National Crane Service Association.

The Crane Service Association, with offices at 914 Swetland Building, Cleveland, Ohio, is a national organization that was formed at a meeting held November 11 and 12 at the Hotel Statler in that city by the unanimous vote of delegates representing companies which offer crane service in their respective communities. This service consists of work done by portable cranes on an hourly tonnage or contract basis for companies which do not have enough use for cranes to own such equipment. Many contractors of wide reputation also use the service of these crane companies locally on their jobs. The association, it is stated, was the idea of Frank A. Peck of the Universal Crane Company to promote co-operation between the different crane-service companies. At the meeting there were representatives from several cities in the South, including Miami, Jacksonville, New Orleans, Birmingham and Louisville, as well as from other points through the country, the attendance numbering about 40. Peter Herkner is president; Charles O'Brien, vice-president, and Q. J. Winsor, secretary and treasurer, all of Cleveland.

## Trade Literature

### Two Zelnicker Supply Company Bulletins.

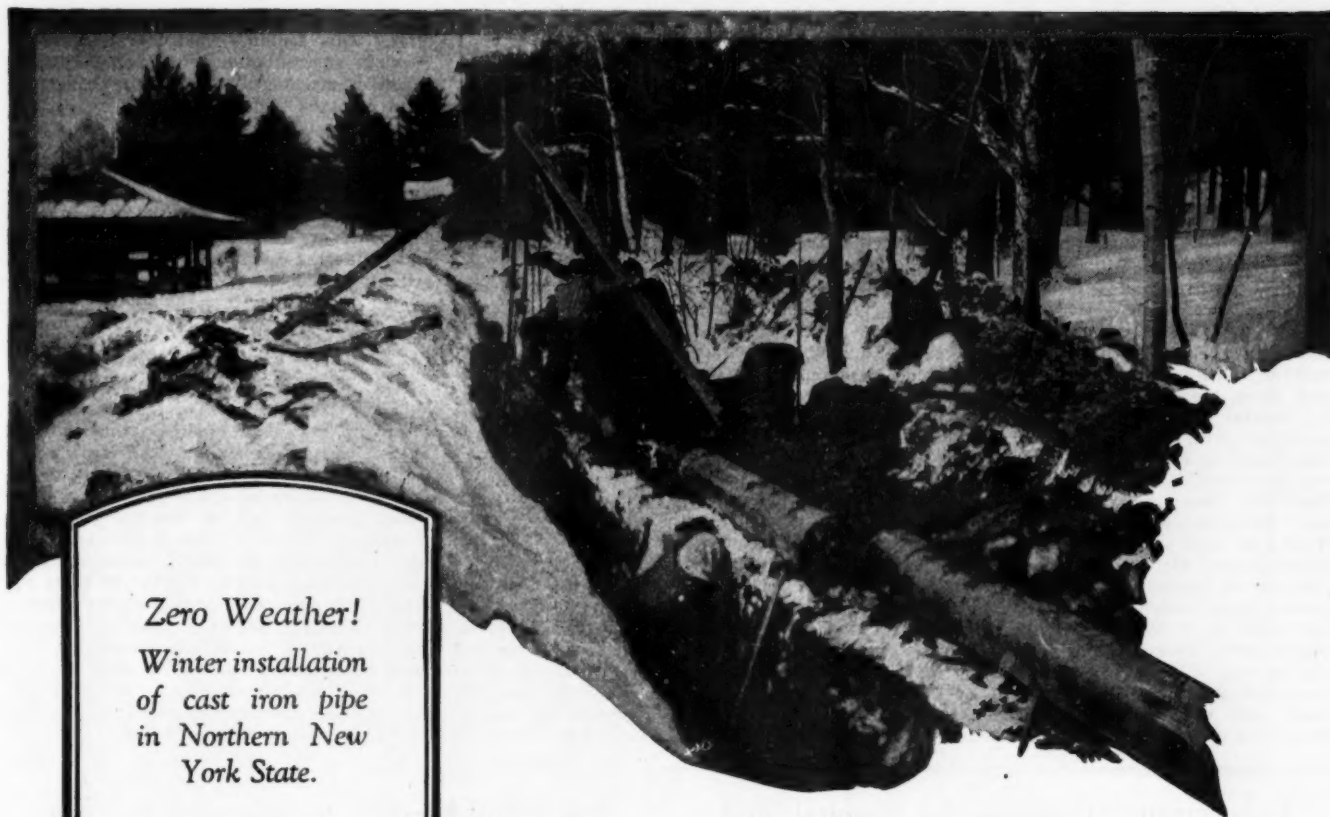
Zelnicker's Bulletin No. 287, published by the Walter A. Zelnicker Supply Company, 325 Locust street, St. Louis, Mo., is styled "Oil Field Special" because it lists a number of special bargains for the producer and refiner of oil. There are eight pocket-width pages to the bulletin, which is in folder form, and it contains a large amount of information about equipment and material on hand for the oil fields and the refineries. Another Zelnicker publication, also a pocket folder, gives information about the company's Ever-Tyte piston rings, which, it is stated, give better results in all large units.

### Lincoln Electric on Arc Welding.

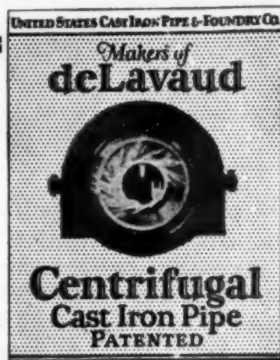
A fine copyrighted book of 160 pages has been published by the Lincoln Electric Company of Cleveland, Ohio, with the title "Arc Welding: The New Age in Iron and Steel." It points out the many advantages of arc welding, the first pictures in the book showing a split sleeve—a device that is used in the oil fields—as it used to look when made of cast-iron weighing 908 pounds, and as it now looks when made of arc-welded steel weighing only 395 pounds, all the work being done by the same manufacturer. The advantages in saving of freight costs are consequently very large. The book is bountifully illustrated, there being many other pictures showing different uses of welding. It is finely printed on heavy paper with fabrikoid cover.

(Continued on page 148)





*Zero Weather!*  
 Winter installation  
 of cast iron pipe  
 in Northern New  
 York State.



**U. S. Cast Iron Pipe can  
 be laid in any weather**

*—this gives you a year  
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Winter laying enables you to hold your construction gang together. New building projects do not have to be held up waiting for a thaw.

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Philadelphia: 1421 Chestnut St.	New York: 71 Broadway
Chicago: 122 So. Michigan Blvd.	San Francisco: 3rd & Market Sts.
Birmingham: 1st Ave. & 20th St.	Pittsburgh: 6th & Smithfield Sts.
Buffalo: 975 East Ferry Street	Dallas: Akard & Commerce Sts.
Cleveland: 1150 East 26th Street	Kansas City: 13th & Locust Sts.
Minneapolis: 6th St. & Hennepin Ave.	

*General Offices:*

**Burlington, New Jersey**

(Continued from page 146)

**New Calendars.**

Calendars for 1927 lately received by the Manufacturers Record include a neat and convenient hanger type, three months to a page, issued by Fecheimer, Frank & Spedden, Inc., advertising, Detroit, Mich. Morgan Engineering Company, Memphis, Tenn., are represented by a fine blueprint wall calendar, all months on one sheet, in a very practical way. International Harvester Company of America, Chicago, Ill., has a very pretty hanger-type calendar, with colored picture of children and a dog, one month to a page. H. E. Houck & Co., printers, Baltimore, have issued a large wall calendar, with big figures and one month to a page, all being done in red and black, the last sheet carrying calendars for several years. An artistic hanger-type calendar, with pictures showing different paper-making operations, has been put out by the Champion Coated Paper Company, Hamilton, Ohio; the whole is done in black and white, except for a border in brown. Young & Selden Company, bank supplies, Baltimore and Pittsburgh, have a fine hanger calendar of modest size, printed in red and brown, three months to a page, a business-like job. O. J. Maigne Company, printers' rollers, New York, Philadelphia and Washington, has a hanger-type calendar, with weekdays down the left-hand side of each page and the dates opposite them, red, black and green being the color scheme.

**Jos. A. Martocello Catalogue, 1927.**

Catalogue No. 51 (1927), published by Jos. A. Martocello & Co., refrigerating engineers, Philadelphia, Pa., gives full particulars, with illustrations, about the Martocello raw-water ice-making systems and supplies. It is a handsomely bound and printed book and the engravings are of the best style. The products of the company are used in many places in the South, including Algiers, La.; St. Petersburg, Fla.; Atlanta, Ga.; Columbia, Tenn.; Tuscaloosa, Ala.; San Antonio, Texas; Greenwood, Miss.; El Reno, Okla.; Shelbyville, Tenn.; Washington, D. C.; Forsyth, Ga.; Fairburn, Ga.; Dallas, Texas; Vidalia, La.; White Stone, Va.; Brunswick, Ga.; Hattiesburg, Miss.; Jacksonville, Fla.; Jackson, Miss.; Palestine, Texas; Reedsville, Va.; Hennessey, Okla.; Sebring, Fla.; Brownwood, Texas; Elizabeth City, N. C., and Oklahoma City, Okla.

**Fine Issue of "Oxy-Acetylene Tips."**

The December issue of Oxy-Acetylene Tips, issued by the Linde Air Products Company, 30 East 42d street, New York, contains on page 92 an exceedingly interesting and valuable article captioned "At Logging Camp and Lumber Mill," which tells about the great usefulness of oxy-acetylene welding and cutting as an aid to a basic industry by conserving mechanical equipment. The article is

fully illustrated with many appropriate pictures. This sentence quoted is impressive: "Savings effected through the reclamation of damaged machinery are usually magnified when the work is done in logging camps in a more or less inaccessible location." This indicates the great economy of both time and money by the use of oxywelding in such places. There are also many other articles in the periodical having to do with the various applications of oxy-acetylene welding and cutting under differing conditions. It is an especially attractive number.

**Several Truscon Publications.**

Several interesting booklets and catalogues have been issued recently by the Truscon Steel Company, Youngstown, Ohio. One of these tells of how copper-bearing steel resists corrosion; it was compiled by Robert D. Snodgrass, consulting engineer. The versatility with which pressed steel is meeting production problems in different lines of manufacture is told in Catalogue No. 666. Foundrymen will find interesting information in the third edition of "Truscon Alloy Steel Foundry Flasks," Flask Catalogue No. 677. Then in Catalogue No. 684 will be found facts concerning alloy steel boxes and platforms, in addition to a number of labor-saving ideas. All these publications are liberally illustrated. Copies will be sent by the company on request.

**Government Allocations for Hospitals and Barracks.**

Washington.—With more than \$7,000,000 available for hospital and barracks construction during the current fiscal year, the War Department has allocated approximately \$5,000,000 to cover the construction of a number of projects. Of the total to be expended \$1,360,000 will be used for Southern work, including \$410,000 for barracks at Camp Meade, Md.; \$90,000 for officers' quarters at the arsenal at Edgewood, Md.; \$725,000 for continuing barracks construction at Fort Benning, Ga.; \$500,000 for barracks at Fort Humphrey, Va., and \$360,000 for barracks construction at Fort Bragg, N. C.

Other allocations include \$450,000 for beginning hospital construction at Schofield Barracks, Hawaii; \$925,000 for barracks and hospital at Camp Lewis, Wash.; \$500,000 for barracks at Camp Devons, Mass.; \$650,000 for barracks and non-commissioned officers' quarters at Selfridge Field, Mich., and \$285,000 for barracks at Fort Wadsworth, N. Y.

**South Carolina Asks Bids on 100 Miles.**

Columbia, S. C.—Sealed bids will be received until January 13 by the State Highway Department at its office here for the construction of more than 100 miles of roads and a number of bridges. Thirteen projects will cover approximately 98 miles of clearing, grubbing, grading and construction of drainage structures and bridges, while one project will embrace approximately seven miles of concrete road. A bridge project will involve the construction of a reinforced concrete and steel bridge over Turkey Creek, in Edgefield county, and another, a treated timber and steel overhead bridge in Kershaw county.

**Work Begins on 10-Story Building at Jackson.**

Jackson, Miss.—Work has been started on the new 10-story office building to be erected here by the First-Capital Realty Company at a cost of approximately \$250,000, exclusive of mechanical and electrical equipment. The building will be 117 by 75 feet, of brick and concrete construction. C. C. Lindsley of Jackson is the architect and S. W. Leard of Baton Rouge, La., general contractor.

**New Grain Elevator in Operation in Texas.**

Plainview, Texas.—A new mill and elevator erected here for the Harvest Queen Mill and Elevator Company have been completed and put in operation. The mill has a daily capacity of 500 barrels of flour, while storage tanks will hold upward of 200,000 bushels of grain. Construction of the plant was handled by the Southwestern Engineering Company of Springfield, Mo.

**Alabama Asks Bids on More Construction.**

Montgomery, Ala.—Bids have been invited by the State Highway Commission for the construction of additional roads and bridges, including 16.5 miles of gravel and chert in Bibb county, 9.77 miles of gravel in Lamar county, 3.48 miles of gravel or chert in De Kalb county, 10.07 miles of sand-clay road in Pike county and for building two treated timber bridges in Lowndes county. Proposals will be received until January 27 on the Pike county project and until January 12 on each of the others.

**Each Southern County Should Raise Its Own Food and Feed Supplies.**

Peoples Bank and Trust Company.

Tupelo, Miss., December 21.

**Editor Manufacturers Record:**

There is a great deal of discussion going on and many different propositions have been advanced in trying to solve the agricultural situation in the South. I make the following suggestion:

If the bankers, merchants and farmers of the cotton-producing counties of the South would organize and survey their own counties and find the amount of food and feed that is shipped into their own county each year, then put on a campaign for producing all their feed and as much of their food as possible on their own farms, it would automatically reduce the cotton acreage and would put their farming on a sound basis.

S. J. HIGH,  
Chairman, Agricultural Committee,  
Mississippi Bankers Association.



In 1868, The New York Central Warehouse and Freight Depot at Beach and Varick Streets, New York City, was roofed with Barrett Pitch and Felt. This 3 1/2-acre roof is still in good condition after 59 years of service.

1868

1927



Barrett Specification Bonded Roof on New York Telephone Company building, New York City. Arch. McKenzie, Voorhees & Gmelin, New York City. Gen'l Const. Marc Eidlitz & Son, Inc., New York City. Roofer: T. New Construction Company, New York City

## BACK IN THE 60's THEY SOLVED ONE BUILDING PROBLEM FOR KEEPS

"...but it was not until the 60's that building contractors and engineers really solved their roofing troubles....Roofs of coal-tar pitch and felt with a wearing surface of slag or gravel soon became part of sound building practice. They were good roofs—and they are still good. For many of those oldtimers can still be seen—still giving staunch, weather-tight protection on factories, warehouses, office buildings."

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The superiority of pitch and felt built-up roofs has been established—proved by the years. Today we find a majority of all our great modern structures roofed with The Barrett

Specification Roof—the pitch and felt roof which is accepted as the last word in permanent roof protection.

When a building is covered with a Barrett Specification Roof, the owner receives a Surety Bond. This bond guarantees against any expense for repairs or maintenance for 20 years—till 1947.

Limited space cuts short this story. If the idea of trouble-free roofs interests you, dictate a brief note to The Built-up Roof Department of The Barrett Company, 40 Rector Street, New York City. Full information regarding The Barrett Specification Roof will be mailed to you.

### Depend on the Barrett Approved Roofer

Throughout the United States a limited number of roofing contractors have been approved by Barrett to lay The Barrett Specification Bonded Roof. These roofers, working closely with Barrett technical men, can be depended on for efficient roofing practice

# Barrett

## SPECIFICATION ROOFS

THE BARRETT COMPANY  
40 Rector Street, New York City

IN CANADA:

The Barrett Company, Limited  
5551 St. Hubert Street, Montreal, Quebec, Canada

# FINANCIAL NEWS

## Bond Issues Proposed

Ala., Bessemer—City Jail—City votes Feb. 14 on \$300,000 bonds. Address City Clerk.

Ala., Brighton, Bessemer—Paving, Sewers, etc.—City plans bond issue. Address City Clerk.

Ala., Tuscaloosa—Road—Tuscaloosa County Board of Revenue receives bids Jan. 10 for \$100,000 bonds.

Fla., Brooksville—Municipal Improvement—City, J. C. Kasee, Clk., rejected bids for \$235,000 6% bonds. Lately noted bids December 18.

Fla., Bushnell—Road—Sumter County Commrs. will call election Jan. 18 for \$360,000 bonds.

Fla., De Land—School—Volusia County Board of Public Instruction, George W. Marks, Sec., receives bids Feb. 10 for \$52,500 bonds; \$30,000 6% \$1000 denom. Special Tax School Dist. No. 28; \$7500 6% \$500 denom. Special Tax School Dist. No. 27; \$15,000 Special Tax School Dist. No. 9.

Fla., Fort Lauderdale—Bridge—City Comm., Glenn E. Turner, Auditor and Clerk, rejected bids for \$300,000 bonds.\*

Fla., Jacksonville—Street—City Comm. plans selling bonds early in 1927.

Fla., Jacksonville—Road—Duval County Commrs., Frank Brown, Clk., receives bids Jan. 21 for \$1,350,000 Fifth Commrs. Dist. bonds.

Fla., Lake Stearns—Municipal Improvement—City, J. M. Lee, Atty., plans \$300,000 bond election for paving, water works, city walks, etc.

Fla., Leesburg—School—School Board, W. B. Treloar, Supr. of Schools, may call \$300,000 bond election.

Fla., Pensacola—School—Escambia County Board of Public Instruction receives bids Jan. 17 for \$50,000 Special Tax School Dist. bonds; Wm. Tyler, Supt.

Fla., Sanford—Hospital—City Comm. will call election Jan. 18 on \$250,000 bonds.

Fla., Tallahassee—City voted \$275,000 5½% bonds \$20,000, repaving; \$50,000, storm drainage; \$40,000, sewerage extension; \$79,000, water works extension; \$36,000, gas plant extension; \$50,000, incinerator; B. H. Bridges, City Auditor.

Fla., West Palm Beach—School—Palm Beach County, Dist. No. 9, receives bids Jan. 26 for \$80,000 6% bonds; J. A. Youngblood, Supt. of Public Instruction.

La., Donaldsonville—Louisiana Highway Comm., Baton Rouge, received low bid from Robinson Construction Co., Centerville, Miss., at \$28,457, for 5.393 ml. gravel, Saint Amant-Pont Vincent Highway, Ascension Parish.

Miss., Bay Springs—Road—Jasper County, Supr. Dist. No. 4, votes Jan. 8 on \$135,000 bonds; Supr. Dist. No. 3 votes Jan. 8 on \$70,000 bonds.

N. C., Highlands—Electric Light and Power System—Board of Commrs. receive bids Jan. 11 for \$35,000 bonds, 6%, \$1000 denom.; J. E. Root, Town Clerk.

N. C., Monroe—Water and Electric Light—Board of Aldermen, J. H. Boyte, Clk., receives bids Jan. 12 for \$200,000 5% \$1000 denom. bonds.

N. C., Marshall—Street—Board of Aldermen authorized issuance of \$65,000 bonds.

N. C., Oriental—Town Commrs., C. G. Carawan, Clk., receives bids Jan. 12 for \$35,000 6% \$1000 denom. bonds; \$23,000 street, \$7000 sidewalk, \$2700 electric light, \$2300 funding.

N. C., Raleigh—Road—State of North Carolina considering \$30,000,000 bond issue; Benjamin Rice Lacey, State Treasurer.\*

Okla., Cordell—Road—Washita County voted \$800,000 bond issue. Address County Commrs.

Okla., El Reno—Sewer—City votes January 28 on \$10,000 bonds. Address City Mgr. Fassett.\*

Okla., Oklahoma City—Municipal Aviation Park—Chamber of Commerce plans floating \$10,000 bond issue.

Okla., Forney—School—City votes soon on \$10,000 bonds. Address Pres. Board of Trustees.

Okla., Tulsa—Underpass—City, C. Schults, City Engr., votes Feb. 27 on \$75,000 bonds.

Tenn., Memphis—Revenue—City Comm., C. C. Pashby, Clk., receives bids Jan. 4 for \$2,250,000 4½% short-term notes.

Tenn., South Pittsburgh—Sewer—City,

Alan S. Kelly, Mayor, will call election about Mar. 1 on \$250,000 bonds.

Tex., Abilene—Municipal Improvement—City, Charles E. Coombes, Mayor, voted \$1,085,000 bonds: \$600,000 water-works expansion and improvement, \$50,000 sewer, \$150,000 paving, \$60,000 improve city auditorium, \$25,000 fire station, \$200,000 high school; O. K. Hobbs, City Engr.\*

Tex., Alamo—Paving—City, J. G. Cox, Mayor, receives bids Jan. 15 for \$35,000 bonds.\*

Tex., Archer City—Road—Archer County Commrs. Court will call election Feb. 5 on \$1,500,000 bonds.

Tex., Beaumont—School—City voted \$200,000 bonds; C. W. Bingham, Supt. Board of Education.

Tex., Brenham—County Hospital—Chamber of Commerce interested in bond election.

Tex., Brownsville—Drainage—Cameron County Water Improvement Dist. No. 6, El Jardin Dist., voted \$600,000 bonds; Oscar C. Dancy, County Judge; W. O. Washington, County Engr.

Tex., Brownsville—Road—Cameron County, Oscar C. Dancy, County Judge, will call election Jan. 29 on \$6,000,000 bonds.\*

Tex., Burnet—Road—Burnet County considering \$350,000 bond issue. Address County Commrs.

Tex., Canyon—Road—Randall County, Rector Lester, County Judge, voted \$250,000 bonds.\*

Tex., Coolee—Sewer—City, J. H. Gamel, Mayor, defeated \$60,000 bonds.\*

Tex., Edinburg—City Hospital—City voted \$306,000 bonds. Address City Clk.\*

Tex., Fredericksburg—Road—Gillespie County plans bond issue. Address County Commrs.

Tex., Houston—School—Board of Education, Houston Independent School Dist., H. L. Mills, Bus. Mgr., receives bids Feb. 1 for \$1,995,000 5% or \$1,064,000 bonds.

Tex., Kingsville—Hospital—Kleberg County may vote on bonds. Address County Commrs.

Tex., La Feria—Paving—City, J. A. Raymond, Sec., voted \$50,000 bonds.\*

Tex., Levelland—Municipal Improvement—City voted \$75,000 sewer and \$50,000 water-works bonds. Address City Sec. or Hawley & Roberts, Engrs., Box 1115, Lubbock.\*

Tex., Lewisville—Municipal Improvement—City defeated \$30,000 sewer; voted \$62,000 water works bonds. Address The Mayor.\*

Tex., Mineral Wells—Improvement—City, Olen Wright, Sec., voted \$80,000 bonds.

Tex., Mission—School—City voted \$85,000 bonds. Address Pres. School Board.\*

Tex., Paducah—Road—Cottle County votes Jan. 15 on \$800,000 bonds. Address Jas. L. Whitley, Paducah.

Tex., Petersburg—School—Petersburg Independent School Dist. voted \$50,000 bonds; E. C. Regan, Pres. of School.

Tex., Plains—Courthouse—Yoakum County votes soon on bonds. Address County Commissioners.

Tex., San Saba—Water and Sewer—City Council ordered election Jan. 18 for \$90,000 water works and \$60,000 sewer bonds.

Tex., Seguin—Road—Guadalupe County Commrs., J. B. Williams, County Judge, will call election Feb. 1 on \$752,000 bonds: \$272,000, district road purchase; \$480,000, road construction.

W. Va., Parkersburg—Municipal Improvement—City, W. E. Stout, Mayor, plans calling election in Feb. on about \$1,000,000 bonds for paving, sewer, water works and probably to purchase Prospect Hill property for city park.

W. Va., Pineville—Road—Wyoming County votes Jan. 11 on \$60,000 Baileyville Dist. and \$325,000 Barkers Ridge Dist. bonds; A. B. Shannon, Engr.

## Bond Issues Sold

Ark., Little Rock—Paving—Commrs. of Missouri-North Arkansas Highway Dist. sold \$60,000 5% bonds to Merchants and Planters Title & Investment Co., Pine Bluff, at \$97.70.\*

Fla., Sarasota—Highway—Sarasota County Commrs., J. R. Peacock, Clk., sold \$681,000 bonds to I. B. Tigrett & Co., 69 Madison Ave., Memphis, at \$668.921.\*

Fla., Stuart—Inlet—Board of Commrs. St. Lucie Inlet Dist., St. Lucie and Martin Counties, C. Van Algen, Sec., sold \$1,000,000 5½%

bonds to J. R. Durrance & Co., Liggett Bldg., Jacksonville, at 99.35.\*

La., Crowley—Road—Arcadia Parish Police Jury, J. D. Medlemka, Pres., sold \$150,000 5% bonds to Hibernia Securities Co., Inc., Hibernia Bldg., New Orleans, at par.\*

La., Jennings—Drainage—Board of Commrs. Fourth Jefferson Drainage Dist., Ernest Arnoult, Treas., Jefferson Davis Parish, sold \$500,000 6% bonds to Caldwell & Co., Nashville, Tenn., at 92.25.\*

La., Lake Charles—Paving—City sold \$353,500 bonds to W. L. Slayton & Co., Dime Bank Bldg., Toledo, Ohio, and Seasongood & Mayer, Ingalls Bldg., Cincinnati, Ohio, at 95¼% of par, accrued interest, etc.\*

Miss., Jackson—Municipal Improvement—City, Walter S. Scott, Mayor, sold \$1,000,000 4½% bonds to A. K. Tigrett & Co., Memphis, and Mississippi Bond & Securities Co., at premium of \$17,000.\*

Miss., Tiptersville—School—Commrs. of Tiptersville Consolidated School Dist. sold \$10,000 bonds to R. J. Shannon, Tiptersville, at par, accrued interest and premium of \$455.\*

N. C., Salisbury—School—Rowan County Commrs., Max Barker, Register of Deeds, sold \$89,000 5½% bonds to White-Phillips Co., Davenport, Ill., at 101; \$32,500 Cleveland Special Tax School Dist., \$32,500 Woodleaf Special Tax School Dist., \$24,000 Mt. Vela Special Tax School Dist.\*

Okla., Enid—Road—Garfield County Commrs. sold \$125,000 5% bonds to First Natl. Bank, Enid, at premium \$5101.10.\*

Tenn., Bristol—Improvement—City, W. K. Carson, Recorder & Treas., sold \$25,500 bonds to Provident Savings Bank & Trust Co., Cincinnati, Ohio, at \$25.955 and accrued interest.\*

Tenn., McKensie—Street—City, H. C. Bryant, Clk., sold \$200,000 bonds to Caldwell & Co., Nashville, Tenn.

Tex., Carthage—Funding, Improvement—City sold \$95,500 6% bonds to Brown-Crummer Investment Co., Schweiter Bldg., Wichita, Kansas, at par.

## Building and Loan Associations

Fla., Clewiston—Clewiston Home Building Assn., capital \$1,000,000, chartered; B. G. Dahlberg, Pres.; H. F. Woodward, Sec.

Miss., Picaune—Picaune Building & Loan Assn., capital \$200,000, incorporated; J. E. DuPont, Jr., Sec.\*

Tenn., Memphis—Memphis Building & Loan Assn. plans increasing capital, \$500,000 to \$5,000,000.

Tex., Gainesville—Hesperian Building & Savings Assn. plans increasing capital \$2,000,000 to \$3,000,000.

## New Financial Corporations

Ala., Birmingham—M. R. Holliday, Knoxville, Tenn., interested in organizing Peoples' Bank & Trust Co., with \$500,000 capital.

Ga., Canton—Etowah Bank, capital \$25,000, chartered; Olin Fincher, Luther Cline.

Mo., Kansas City—City Bank, R. Crosby Kemper, Pres., plans increasing capital \$100,000 to \$300,000.

Mo., Kansas City—Sheffield Securities Co., capital \$10,000; W. A. Hewitt, 133 S. Elmwood Ave.

Mo., St. Louis—St. Louis Home Loan Co., capital \$15,000, incorporated; Harry Kaplan, 2911 Thomas St.

Mo., St. Louis—St. Louis United Loan Co., of St. Louis, incorporated; Ben Nernstein, 3421 California Ave.

N. C., Benson—First National Mortgage Co., capital \$25,000, incorporated; R. H. Colvin, W. H. Massengill.

N. C., Hendersonville—Citizens' Finance Co., capital \$50,000, incorporated; E. W. Ewbank, N. Main St.

N. C., Pisgah Forest—Brevard Mortgage Corp., capital \$100,000, incorporated; Thomas H. Shipman, J. S. Silversteen.

Tenn., Chattanooga—American Finance & Bond Co., capital \$250,000, organized; Oscar Mathers, E. C. Johnson.

Tenn., Nashville—Nashville Savings & Loan Corp. plans increasing capital \$200,000 to \$300,000.

Bankers Mortgage Co., W. H. Truschel, Pres., 1530 Market St., Wheeling, W. Va., purchased American Mortgage & Discount Corp.; H. A. Lampman will be manager.

In writing to parties mentioned in this department it will be of advantage to all concerned if the Manufacturers Record is mentioned.



**THE BANK OF ALABAMA**

ENSLEY, ALABAMA

R. A. TERRELL ..... President  
 J. W. MINOR ..... Vice-President  
 FOSTER HAMILTON ..... Cashier

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 We buy city, county, district, school, road, lighting, water  
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**We Buy Bonds**

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We Buy and Sell

**MUNICIPAL BONDS AND NOTES****CORPORATE PREFERRED****STOCK and BOND ISSUES**

See Us on Southern Financing

**R. S. DICKSON & CO.,** Gastonia, N. C.  
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**WE BUY MUNICIPAL BONDS**

We are interested in the purchase of  
 Southern Municipals including road,  
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We are interested in the purchase of first mortgage  
 bond issues covering business property, hotels, apartment  
 houses, etc., in amounts of \$50,000 and upwards. Entire  
 issues city, county and district bonds purchased.

**MARX AND CO.**

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 Is Different From Others**

Its policy is pleasing 16,000  
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 Address us in regard to your  
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*We invite your inspection of our modern,  
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GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00 Member Federal Reserve System

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We are interested in  
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 BALTIMORE, MD.

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 MACON, GA.**

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**GERALD S. TRITT**

Advocate, Barrister,  
 Counsellor-at-Law,  
 Solicitor

Suite 418 A  
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CANADA

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 BALTIMORE**

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Correspondence and interviews invited

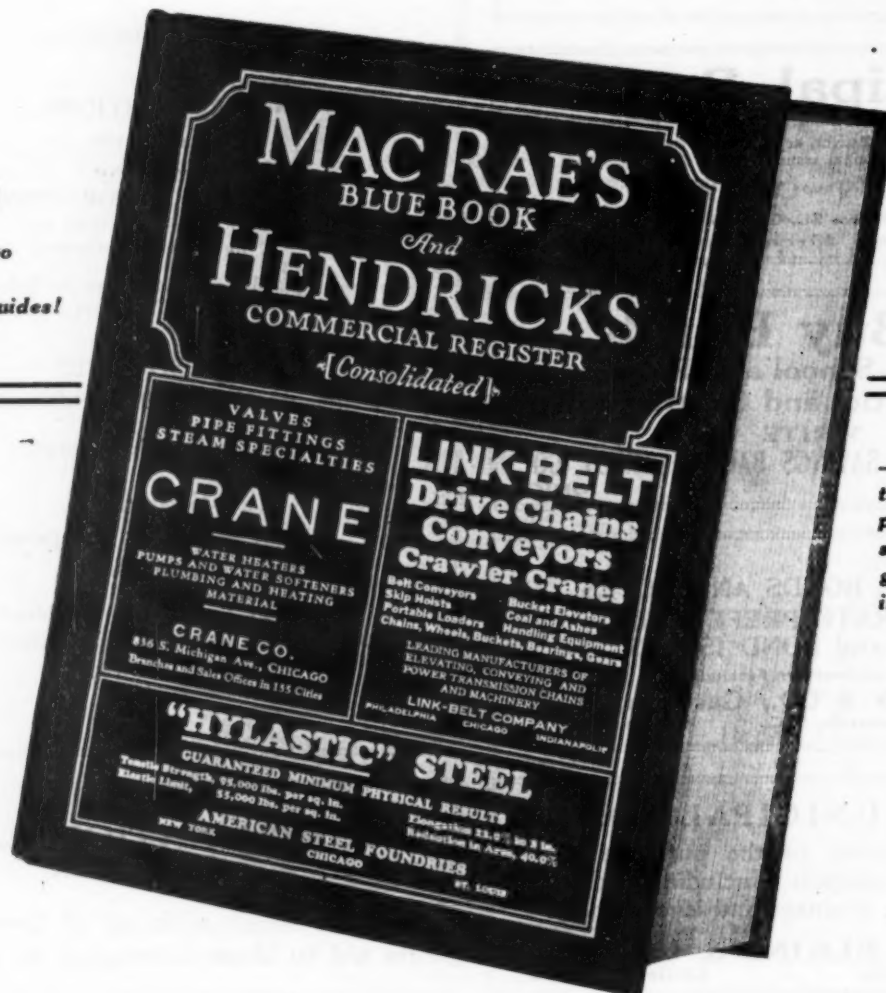
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 Financing**

**CURTIS & SANGER**  
 49 Wall Street - NEW YORK

# The Premier Sales Medium!

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## MACRAE'S & HENDRICKS, Consolidated!

Consulted daily by the majority of men who specify or buy for large industrials, railroads and the government.

That's why so many prominent manufacturers have found it profitable to advertise in MacRae's Blue Book (since 1913) and Hendricks Commercial Register (since 1891).

That's why you see the advertisements of so many prominent manufacturers in the 1926 edition of MacRae's & Hendricks, Consolidated.

That's why you should now reserve adequate display space and bold-face listing of your products in the 1927 edition of this premier sales medium!

MACRAE'S BLUE BOOK COMPANY,  
18 E. Huron St., Chicago, Ill.

Please send at once complete information as to rates for display space and bold-face listings of our products in the 1927 edition of MacRae's & Hendricks, Consolidated.

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(Name of Company)

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(Street Address)

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(City)

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(State)

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(Name and Title of Official)



WE extend the facilities of our organization to those desiring information or reports on companies with which we are identified.

## Electric Bond and Share Company

(Incorporated in 1905)

Paid-up Capital and Surplus, \$85,000,000

71 Broadway

New York

## FLORIDA'S SAFEST INVESTMENT

Shares in its old-established Building and Loan Association

Become a member of the Lakeland Building and Loan Association and invest in its capital stock.

**RETURNS 8% WITH 100% SECURITY**

Dividends of 2% are payable, in cash, every three months on full paid shares.

Subject to Supervision and Examination of the Comptroller of the State of Florida.

Lakeland, Florida's highest city; Florida's largest inland city, finest climate and best water in the State; in Polk County, the largest citrus-producing county in the world.

Let us tell you how you may take advantage of these facts and increase your income.

Ask us to send you our booklet.

**LAKELAND BUILDING AND LOAN ASSOCIATION**

Box 35

LAKELAND, FLORIDA

WILMER BLACK, C. P. A.

ROBERT W. BLACK, C. P. A.

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Established 1899

CLEVELAND

New York Chicago Detroit Cincinnati Denver  
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## Serving The Southeast From Richmond

The importance of Richmond as a financial center was given public recognition when it was chosen to be reserve city of the Fifth Federal Reserve District.

And in the Southeast, the First and Merchants National Bank of Richmond, with resources of more than \$50,000,000; with extensive banking connections and sources of credit information; with direct collection facilities with every banking point in the Virginias and Carolinas; with an able staff of wide experience, and with facilities for providing the kind of banking aid desired, renders a service that is difficult to equal.

## FIRST AND MERCHANTS National Bank of Richmond

John M. Miller, Jr., President

Capital, Surplus and Undivided Profits \$6,300,000

## "The Early 1880's in Baltimore"

Southern men and women who lived in, or visited Baltimore in the period when this Company was established—which was the year of 1884—will be interested, we believe, in our anniversary book "The Early Eighties: Sidelights on the Baltimore of forty years ago." A copy will be sent upon request.

## MERCANTILE TRUST & DEPOSIT CO. OF BALTIMORE

Resources \$21,000,000 A. H. S. POST, Pres. F. G. BOYCE, Jr., Vice-Pres.

## The President of the United States

In addressing the American Association of Advertising Agencies in Washington on October 27, 1926, said:

"SOMETIMES it seems as though our generation fails to give the proper estimate and importance to the values of life.

"It seems to me probable that of all our economic life the element on which we are inclined to place too low an estimate is advertising."

### Defense Highway Opened in Maryland.

Annapolis, Md.—The National Defense highway, connecting Annapolis and Washington, recently completed, has been formally opened to traffic. The road is of concrete, 16 feet wide, and shortens the route between the two cities by approximately 12 miles. Shoulders are expected to be placed on the road in the spring, following which formal dedicatory ceremonies will be held.

### \$250,000 Hotel and Theater Planned.

Plainview, Texas.—The erection of a five-story hotel and theater to cost about \$250,000 is planned by J. N. Donohoo of this city, who has commissioned Kerr & Walsh of Plainview to prepare plans and specifications. The building will be of fireproof construction, reinforced concrete with rough face brick and will contain approximately 100 rooms with bath. It will be operated by F. A. Hart, manager of Hotel Ware.

### \$1,000,000 Bonds Sold for Jackson Improvements.

Jackson, Miss.—Bonds in the amount of \$1,000,000, to bear an interest rate of 4% per cent, have been sold by the city of Jackson to A. K. Tigrett & Co. of Memphis, Tenn., at a premium of \$17,000. Funds from the sale will be used for the erection of two new school buildings and for improvements and extensions to the water and sewer systems.

### Building Dwellings for Industrial Workers.

H. B. Skinner, secretary of the Burlington (N. C.) Chamber of Commerce, advises the MANUFACTURERS RECORD that contracts have been awarded by the Burlington Real Estate Company, J. E. Carrigan, president, for the immediate erection of 20 dwellings in East Burlington for industrial workers. They will represent an investment of approximately \$150,000. Nineteen houses have already been completed by the company, which plans an extensive program of expansion work in 1927.



BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



## PROPOSALS

Bids close February 7, 1927.

U. S. Engineer Office, Mobile, Ala. Sealed proposals will be received here until 11 o'clock A. M. February 7, 1927, and then opened, for constructing and delivering one 100-foot Diesel Electric harbor tug. Further information on application.

Bids close February 10, 1927.

#### Bridge

Baton Rouge, La. Sealed proposals will be received by the LOUISIANA HIGHWAY COMMISSION at their office in the Raymond Building, Baton Rouge, Louisiana, up to 11 o'clock A. M. THURSDAY, FEBRUARY 10, 1927, at which time and place they will be publicly opened, for the construction of the Moncla Ferry Bridge over Red River, 30 miles southeast of Alexandria and 6 miles north of Marksville, on the Marksville-Jonesville Highway. Avoyelles Parish, Federal Aid Project No. 171-A.

The project consists of furnishing all material and constructing a bridge over Red River, consisting of one 300-foot steel swing span and one 320-foot steel fixed span resting on reinforced concrete piers, with pile footing; also 550 lineal feet creosoted pile trestle approach and necessary protection fenders for the draw span.

The approximate quantities involved are as follows:

- 3,700 cubic yards structural excavation.
- 2,700 cubic yards concrete in piers.
- 135 cubic yards reinforced concrete in floor slabs.
- 1,200,000 pounds fabricated structural steel in trusses.
- 75,000 pounds drawbridge machinery.
- 110,000 pounds reinforcing steel.
- 23,400 lineal feet untreated timber foundation piling.
- 17,400 lineal feet creosoted timber piling.
- 350,000 board feet creosoted lumber.
- 7,000 board feet untreated lumber.
- 2,500 square yards rock asphalt surfacing.
- 14 timber-test piles.
- 2 concrete project markers.
- 1 drawbridge power plant and operator's house.

Information as to the location, character of work, extent and class of material, terms of payment, regulations governing manner of submitting proposals and executing contract may, on application, be obtained at the office of the Louisiana Highway Commission, Raymond Building, Baton Rouge, La. Plans and Specifications may be inspected at the office of the Commission in Baton

RATE: 35 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE: 4 P. M. Monday.

DAY LETTER: When too late to send copy by mail to reach us by 4 P. M. Monday, forward by day letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—35 cents per line per insertion.

Rouge or will be furnished upon receipt of \$5.00 as payment therefor, not to be refunded. Each bid shall be submitted on a form furnished by the Commission and shall be placed, together with the proposal guaranty, in a sealed envelope so marked as to indicate its contents without being opened. This envelope shall then be placed in another, which shall be sealed and addressed to the Louisiana Highway Commission, Raymond Building, Baton Rouge, Louisiana.

W. B. ROBERT.

State Highway Engineer.

W. E. ATKINSON.

Chairman Louisiana Highway Commission.

Bids close January 11, 1927.

#### Tunnel Construction

Chattanooga, Tenn., December 17, 1926. Sealed bids will be received until 1 P. M. January 11, 1927, and publicly opened by the Highway Commissioners of Hamilton County, Tennessee, at the office of the Tunnel Engineers in the Courthouse in Chattanooga, Tennessee, for furnishing all labor, tools, machinery, equipment and materials necessary and required in the construction of a highway tunnel or twin tunnels through Missionary Ridge and the approaches thereto. All information may be obtained from, and bids addressed to, A. M. Nelson, Tunnel Engineer, Courthouse, Chattanooga, Tennessee, marked "Tunnel Bids." Plans and specifications may be examined at his office. No bids will be considered except from experienced tunnel builders with adequate equipment.

Cash in banks to pay engineers' estimates monthly as work progresses.

The Highway Commissioners reserve the right to reject any and all bids.

Certified check for the sum of One Thousand (\$1000) Dollars must accompany each bid as evidence of good faith and as a guarantee that if awarded contract the bidder will execute contract and give bond as required, to be forfeited in event the bidder fails to do so.

HAMILTON COUNTY HIGHWAY COMMISSION.

T. S. WILCOX, Chairman.

J. M. PAYNE.

ALVIN ROBERTSON.

Bids close January 27, 1927.

#### Road Construction

Sanford, Fla.

Sealed bids will be received by the Board of County Commissioners of Seminole County, Florida, at the office of the Circuit Clerk of Seminole County at Sanford, Florida, up to 10 A. M. on the 27th day of January, 1927, for the furnishing of all labor, material, equipment and other things necessary for the construction of 35½ miles of road, located in Seminole County, Florida.

The work will consist of approximately 60 acres clearing, 140,000 cu. yds. grading, 230,000 sq. yds. paving, together with the necessary drainage structures, which will include 8 bridges and 12 concrete culverts.

Plans and specifications are on file at the offices of the Clerk of the Circuit Court and Fred T. Williams, Engineer, at Sanford, Florida. Copies of the above may be obtained by depositing ten dollars with the Engineer. Money refunded if bid is made.

Proposals must be submitted on regular forms, which will be supplied by the county, and must be accompanied by a certified check, made payable to V. E. Douglas, Clerk of the Circuit Court of Seminole County, Florida, for an amount equal to three per cent of the total amount of the bid.

The successful bidder will be required to give a surety bond, approved by the Board of County Commissioners of Seminole County, Florida, for an amount equal to fifty per cent of the amount bid.

The right is reserved by the Board of County Commissioners of said county to reject any or all bids, and to waive formalities or accept any bid or any part thereof, which in their judgment the interest of the county will be promoted thereby.

JOHN MEISCH.

Chairman Board of County Commissioners.

V. E. DOUGLAS,

Clerk of the Circuit Court.



Bids close January 31, 1927.

**Road Paving**

Tavares, Fla.

Sealed proposals on blank forms furnished by the county and addressed to the "BOARD OF COUNTY COMMISSIONERS OF LAKE COUNTY, TAVARES, FLORIDA," will be received at the office of the Clerk of Court in the Courthouse at Tavares, Florida, until 11 A. M. January 31, 1927, for furnishing all material, equipment and labor for the following work:

Approximately 7½ miles of bituminous surface treatment paving on a limestone base and 5 miles of graded road, together with all incidentals connected therewith, located in Special Road and Bridge District Number 3, Lake County, Florida.

Each bid shall be accompanied by a certified check or satisfactory bidder's bond in the sum of not less than ten thousand (\$10,000) dollars, made payable to T. C. Smyth, Clerk of Court.

Plans and specifications may be seen at the office of the County Engineer in Tavares, Florida, and at the offices of the H. S. Jaudon Engineering Company in Eustis, Florida, and specifications will be furnished by the H. S. Jaudon Engineering Company upon payment of \$2.00 to cover cost of reproduction.

The right is reserved to reject any or all bids.

BOARD OF COUNTY COMMISSIONERS OF LAKE COUNTY, FLORIDA.

By M. V. SIMPSON, Chairman.

T. C. SMYTH, Clerk of Court.

H. S. JAUDON ENGINEERING CO.,  
Engineers, Eustis, Florida.

Bids close January 26, 1927.

**Roads and Bridges**

OFFICE OF THE STATE ROAD  
DEPARTMENT

Tallahassee, Fla., December 27, 1926.

Sealed bids will be received at this office until 10 A. M. on the 26th day of January, 1927, for constructing the following projects:

Project 693, Road No. 4, St. Lucie County, from Fort Pierce to the Martin County Line, approximately 8.93 miles in length. Alternate bids will be received on plain cement concrete surface and asphaltic surfaces on Florida Limerock Base.

Project 694, Road No. 4, Martin County, from St. Lucie County Line to Stuart, approximately 8.48 miles in length. Alternate bids will be received on plain cement concrete surface and asphaltic surfaces on Florida Limerock Base.

F. A. Project No. 48, Road No. 4, St. Johns County, from St. Augustine to Pellicer's Creek, approximately 15.39 miles in length. Work to consist of constructing and surface treating an 8-inch Florida Limerock Base.

Project No. 641, Road No. 4, Palm Beach County, from Kelsey City to Jupiter, approximately 9.67 miles in length. Work to consist of constructing and surface treating an 8-inch Florida Limerock Base.

The following projects are to be cleared, grubbed, graded and the necessary drainage structures constructed.

Project 685, Road No. 10, Franklin County, from Carrabelle to East Point, approximately 17.43 miles in length.

Project 695, Road No. 2, Lake County, from Silver Lake Forks to Eustis, approximately 10.50 miles in length. Work on 1.3 miles of which consists of hydraulic fill, and bids will be considered separately on this work.

**BRIDGES.**

F. A. Project No. 40-B, Road No. 4, Brevard County. Work to consist of constructing a Reinforced Concrete Bridge, 108 feet in length, across Turkey Creek.

Project 640-B, Road No. 4, Martin County. Work to consist of constructing a Reinforced Concrete Overhead, 131 feet in length.

Project 684, Road No. 3, Clay County. Work to consist of constructing a Reinforced Concrete Bridge on Precast Concrete Piles, 1600 feet in length, across Doctor's Inlet.

Project 665, Road No. 3, Clay County. Work to consist of constructing a Reinforced Concrete Bridge on Precast Concrete Piles, 1400 feet in length, across Black Creek.

All work to be done in accordance with plans and specifications of the State Road Department.

A certified check, made payable to the Chairman of the State Road Department, in the sum of five (5%) per cent of the amount bid must accompany each proposal.

Plans may be examined at this office, at

the office of the Division Engineer and may be obtained upon application to this office, accompanied by a \$5.00 deposit for each project, which deposit will be refunded if plans are returned in good condition within ten days after bids have been received by a bona fide bidder.

The right is reserved to reject any or all bids.

F. A. HATHAWAY,  
Chairman.

J. L. CRESAP,  
State Highway Engineer.

Bids close January 25, 1927.

**Water-Works, Sanitary Sewers and Pavement Construction**

Cedar Key, Fla.

Sealed proposals will be received by the Board of Bond Trustees of the City of Cedar Key, Florida, until 2 P. M. Tuesday, January the 25th, 1927, for the following Water Works, Sewer and Pavement Improvements, for which bonds to the amount of \$60,000 for water works, \$45,000 for sewer system and \$45,000 for pavement construction have been provided, the municipal pavement bonds representing approximately one-third only of the contemplated street improvements, about twice that amount to be added thereto from frontage assessments; the work to embody a system of shallow wells, masonry reservoir, elevated steel water tank, pumping station, water-works distribution system, water works and sewage pumps, septic tank, sewage-collecting system, pavement of asphalt or cement or bituminous concrete and all requisite accessories to these improvements, in accordance with Plans and Specifications on file in the City of Cedar Key, where bids will be received and publicly opened and read.

Plans and Specifications may be secured from the Engineers upon application, stating what part or parts of the work the applicant seeks, accompanied by a deposit of twenty-five dollars, partial sets only being furnished for fifteen dollars, three-fifths of these deposits being refundable on demand to bona fide bidders and one-fifth to non-bidders, upon prompt return of the instruments in good condition.

The right is reserved to reject any and all bids.

BOARD OF BOND TRUSTEES,  
Cedar Key, Florida.  
G. R. ANDREWS, Chairman.  
H. R. ROGERS, Secretary.  
MAIN ENGINEERING CO., INC.,  
Engineers.

112 Baker street, Daytona Beach, Fla.

Bids close January 12, 1927.

**Water Works Improvements**

Henderson, N. C.

Sealed proposals will be received by the City of Henderson, N. C., until 11 A. M. January 12, 1927, for the construction of Water Works Improvements.

The work will consist of the construction of a complete Water Purification Works, including Subsidence Basins, Filters, with all Filter Equipment and Piping; Clear Water Basin, Brick Building, Filter Housing, Pump Room, Chemical Storage, etc.; Pumping Equipment and Electrical Control Equipment for the same; twelve (12") inch Cast-Iron Pipe Line to connection with existing Distribution System, and certain other items necessary for complete New Purification Works.

Proposals must be marked "PROPOSALS FOR WATER WORKS IMPROVEMENTS." All bids must be made on the blank forms provided in copies of the PROPOSAL, CONTRACT AND SPECIFICATIONS and directed to the Mayor and City Council of the City of Henderson, N. C.

Each bid must be accompanied by a certified check in the amount of five (5%) per cent of the amount of the bid, but in no case for less than Two Hundred Fifty (\$250) Dollars, as evidence of good faith.

Bids will not be received from any Contractor who is not licensed under the laws of North Carolina.

Copies of the Plans, Specifications, Form of Proposal, Contract, etc., may be obtained upon application to the Engineer.

The right is reserved to reject any or all bids or to award contracts which, in the opinion of the Engineer and the City Council, appear to be for the best interests of the city.

S. R. CHAVASSE, Mayor.  
S. B. BURWELL, City Clerk.  
WILLIAM C. OLSEN, INC.,  
Consulting Engineer,  
Raleigh, N. C.

Bids close February 9, 1927.

**Sanitary Sewer System**

Winter Park, Fla.

Sealed proposals will be received by the City Council of the City of Winter Park, Fla., until 8 o'clock P. M. on the ninth day of February, 1927, at the City Hall for the furnishing of materials and construction of a Sanitary Sewer System, consisting of the following items, to wit:

- 300 lin. ft. 24-inch C. I. Pipe, Class "A," on piers.
- 2,153 lin. ft. 24-inch clay or concrete sewer, 0-4 ft. cut.
- 2,460 lin. ft. 24-inch clay or concrete sewer, 4-6 ft. cut.
- 995 lin. ft. 24-inch clay or concrete sewer, 6-8 ft. cut.
- 395 lin. ft. 24-inch clay or concrete sewer, 8-10 ft. cut.
- 20 lin. ft. 24-inch clay or concrete sewer, 10-12 ft. cut.
- 1,270 lin. ft. 21-inch clay or concrete sewer, 0-4 ft. cut.
- 2,475 lin. ft. 21-inch clay or concrete sewer, 4-6 ft. cut.
- 840 lin. ft. 21-inch clay or concrete sewer, 6-8 ft. cut.
- 80 lin. ft. 21-inch clay or concrete sewer, 8-10 ft. cut.
- 40 lin. ft. 21-inch clay or concrete sewer, 10-12 ft. cut.
- 625 lin. ft. 21-inch clay or concrete sewer, 12-14 ft. cut.
- 620 lin. ft. 21-inch clay or concrete sewer, 14-16 ft. cut.
- 850 lin. ft. 21-inch clay or concrete sewer, 16-18 ft. cut.
- 175 lin. ft. 21-inch clay or concrete sewer, 18-20 ft. cut.
- 200 lin. ft. 16-inch C. I. Pipe, Class "A," Siphon.
- 255 lin. ft. 12-inch clay or concrete sewer, 8-10 ft. cut.
- 370 lin. ft. 12-inch clay or concrete sewer, 10-12 ft. cut.
- 4,000 lin. ft. 10-inch C. I. Pipe, Class "A," Force Main.
- 2,640 lin. ft. 10-inch clay or concrete sewer, 0-6 ft. cut.
- 1,125 lin. ft. 10-inch clay or concrete sewer, 6-8 ft. cut.
- 730 lin. ft. 10-inch clay or concrete sewer, 8-10 ft. cut.
- 250 lin. ft. 10-inch clay or concrete sewer, 10-12 ft. cut.
- 16,490 lin. ft. 8-inch clay or concrete sewer, 0-6 ft. cut.
- 4,195 lin. ft. 8-inch clay or concrete sewer, 6-8 ft. cut.
- 170 lin. ft. 8-inch clay or concrete sewer, 8-10 ft. cut.
- 600 lin. ft. 6-inch clay or concrete house connection stacks.
- 200 24-inch x 6-inch clay or concrete Y's.
- 75 21-inch x 6-inch clay or concrete Y's.
- 30 12-inch x 6-inch clay or concrete Y's.
- 320 10-inch x 6-inch clay or concrete Y's.
- 1,000 8-inch x 6-inch clay or concrete Y's.
- 94 Manholes.
- 42 Vert. ft. Drop Manholes.
- 33 Flush Tanks, 5-inch siphons.
- 2 Clean-out boxes.
- 40,000 ft. B.M. timber foundation.
- 20 cu. yds. Class "A" concrete.
- 150 cu. yds. Class "C" concrete.
- 1 Pumping Station complete.
- 2 Direct-connected centrifugal pumps and motors.
- 1 Imhoff tank and accessories.
- 600 lin. ft. 18-inch clay or concrete sewer, 0-4 ft. cut.

Alternate bids will be received for the furnishing of the pipe and specials, F. O. B. Cars, Winter Park, Fla.

Plans and specifications may be examined at the office of the Clerk at the City Hall, Winter Park, Fla., or at the office of the Engineer in New Smyrna, Fla. Copies of the specifications may be obtained from the above places upon receipt of \$5.00, which will be returned on a bona fide bid. Copies of the plans may be obtained upon receipt of fifteen dollars.

Each bidder must accompany bid with a certified check or bidder's bond for an amount not less than five per cent of the amount bid, drawn to the order of the City of Winter Park, Florida.

The right is reserved to reject any or all bids in whole or in part.

C. FRED WARD,  
Mayor of City of Winter Park, Fla.  
E. F. BELLOWES, Clerk.  
N. A. HOTARD, Engineer.

Bids close January 11, 1927.

**Water Works Improvements**

Farmerville, La.

The Mayor and Board of Aldermen of the Town of Farmerville, Louisiana, will receive bids at the Town Hall until eleven o'clock A. M. January 11, 1927, for material and labor necessary in the building of the Water-works Improvements.

Approximately the following equipment and materials will be required:

Two (2) 500-G.P.M. Fire Pumps, either motor driven, centrifugal or oil engine driven power pumps.

One (1) 6-in. Water Well.

One (1) 50,000-gallon steel tank and tower.

One (1) 12,000-gallon oil-storage tank.

One (1) 125,000-gallon concrete reservoir.

2,400 ft. of 8-in. Cast Iron Pipe.

2,400 ft. of 6-in. Cast Iron Pipe.

13,730 ft. of 4-in. Cast Iron Pipe.

11,000 ft. of 2-in. Cast Iron Pipe, or Steel Pipe.

Sundry hydrants, valves and fittings, etc.

Pump house.

Labor laying pipe and general construction.

Plans and specifications will be on file at the office of the Town Clerk, Farmerville, La., and at the office of the Engineers. All bids must be submitted on blanks for the purpose furnished with the specifications.

Plans and specifications, with bid sheets, can be obtained from the ENGINEERS, SWANSON-McGRAW, INC., 426 Balter Building, New Orleans, La., by depositing Ten Dollars (\$10), which amount is not refundable.

Each bid must be accompanied by a certified check (Bidder's Bond not acceptable) in the amount of five per cent (5%) of the gross amount bid, but in no event shall check be in less amount than Fifty Dollars (\$50), as evidence of good faith.

The right is reserved to reject any or all bids, waive any or all formalities, or accept any bid or bids, which in the opinion of the Board appear to be to the best interest of the Town.

J. W. STANCIL, JR., Mayor.

J. W. BOOTH, Clerk.

SWANSON-McGRAW, INC.,  
Consulting Engineers,  
426 Balter Building,  
New Orleans, La.

Bids close January 12, 1927.

**Flood Control Works**

Brownsville, Texas.

Sealed proposals, addressed to the Commissioners' Court of Cameron County, for the construction of Flood Control Works in Units 1 to 14, inclusive, of Division A, being the North Floodway, and Units 1 to 12, inclusive, of Division B, being the Arroyo Colorado Floodway, as indicated on Plans and Specifications of said work, said work including clearing and grubbing, levee work, structures, etc., will be received at the office of the County Auditor at Brownsville, Texas, until 2 o'clock P. M. on Wednesday, January 12, 1927, and then publicly opened and read.

Detail plans and specifications may be seen and information obtained at the office of W. O. Washington, County Engineer, in the Court House at Brownsville, Texas.

**APPROXIMATE QUANTITIES:**

Division "A," North Floodway.

Clearing and Grubbing.....8000 acres  
Levee Work.....3,000,000 cu. yds.  
Concrete.....150 cu. yds.  
and other items necessary to complete the work shown on Plans.

Division "B," Arroyo Colorado

Clearing and Grubbing.....700 acres  
Levee Work.....2,000,000 cu. yds.  
Concrete.....2200 cu. yds.  
and other items necessary to complete the work shown on Plans.

A certified check for 5 per cent of the amount of bid, made payable to the order of Oscar C. Dancy, County Judge of Cameron County, must accompany each proposal as a Guaranty that the bidder, if successful, will enter into contract and furnish bond in accordance with specifications.

The right is reserved by the Commissioners' Court to reject any and all proposals and to waive technicalities. Also the right is reserved to award in one contract either

entire Division or to award any Units thereof separately, in accordance with the proposal.

Proposals must be submitted in sealed envelopes and marked "Bid for Construction of Cameron County Flood Control Works."

J. J. BISHOP,

County Auditor of Cameron Co.

Bids close January 20, 1927.

**Sewage-Disposal Works**

Blacksburg, Va.

Sealed proposals for the construction of Sewage Disposal Works for the Virginia Polytechnic Institute and the Town of Blacksburg, Virginia, will be received at the office of the President, Virginia Polytechnic Institute, Blacksburg, Virginia, until noon on January 20, 1927, at which time they will be publicly opened and read.

Plans and specifications may be secured on or after January 3, 1927, from the office of the Consulting Engineer, S. B. Williamson, 704 National Bank Building, Charlottesville, Virginia, upon deposit of Fifteen (\$15) Dollars. The Plans and Specifications are on file at the above office and at the Administration Building, V. P. I., Blacksburg, Va. Bids are required to be made out on the form provided and must be accompanied by a certified check for Ten Thousand (\$10,000) Dollars. Bond in the amount of Fifty Thousand (\$50,000) Dollars is required.

The work consists of furnishing all labor and material required for the construction of an Imhoff tank, contact beds, final settling tank and sludge beds, with appurtenances, involving principally the following approximate quantities:

Earth Excavation.....6000 cu. yds.

Rock Excavation.....1500 cu. yds.

Reinforced Concrete.....1675 cu. yds.

Crushed Stone.....6500 cu. yds.

The Engineer will be at the site of the work on January 12 and 19 for the convenience of prospective bidders.

The Virginia Polytechnic Institute and the Town of Blacksburg reserve the right to reject any or all bids, and to consider the qualifications of the bidder in awarding the contract.

JULIAN A. BURRUSS,

President, Virginia Polytechnic Institute.

F. E. EHEART,

Chairman Sewer Committee,  
Blacksburg, Virginia.

Bids close January 24, 1927.

**High School Building**

Miami, Fla.

The Dade County Board of Public Instruction will receive at the Board's office, Central School Building, 69 N. E. Third street, Miami, Florida, at 1.30 P. M. January 24, 1927, sealed bids for the construction of a Miami Senior High School Building to be located at S. W. 24th avenue and First street, Miami.

Plans and specifications may be obtained at the office of Klehnel & Elliott, Architects, 930 Seybold Building, Miami.

Bids will be received from General Contractors covering the construction of the building both with and without Plumbing and Electrical work. Separate bids will also be received from Plumbing and Electrical Contractors in these items. Separate Mechanical Contracts may be awarded if to the Owner's interest.

Owner reserves the right to reject any or all bids.

General Contractors may receive two sets of plans; Plumbers and Electricians who want to submit separate bids, one set. A deposit of twenty-five dollars (\$25) per set will be required to insure the safe return of plans and specifications.

Bid Bonds or Certified Checks must accompany proposals as follows: Proposals on General Contract, exclusive of mechanical, twenty thousand dollars (\$20,000); Proposals on Plumbing only, one thousand dollars (\$1000); Proposals on Electrical only, one thousand dollars (\$1000).

Surety Bonds of 100% of contract prices will be required of successful bidders, but the Owner will pay the premiums on same.

The Owner will make by-weekly cash payments on contracts amounting to 85% of work completed and material on the grounds.

CHAS. M. FISHER,

County Superintendent.

Bids close January 11, 1927.

**10,000,000 Gallon Centrifugal Pump**

Macon, Ga.

On Tuesday, January 11, 1927, at 6 o'clock P. M., bids will be received for one 10,000,000-gallon Centrifugal Pump, Steam Turbine Drive, to be installed at the Riverside Pumping Station of the Macon Water Works. The right is reserved to reject any and all bids. For further information prospective bidders may communicate with R. E. Findlay, Secretary and Treasurer, Board of Water Commissioners, Macon, Ga.

Bids close January 11, 1927.

**Deep-Well Pump**

Tallahassee, Fla., December 16, 1926.

Bids will be received by the City Auditor and Clerk of the City of Tallahassee, Fla., until 12 o'clock noon January 11, 1927, for Deep-Well Pump.

**SPECIFICATIONS.**

Maximum capacity of pump to be 1200 G.P.M. against a total of 200-foot head, consisting of 100-foot lift to the surface; discharge 190 feet above the surface, directly connected to a General Electric slip-ring motor, three-phase, 60-cycle, 2300-volt, with starter, having under voltage and overload protection, with starting resistance. Drop pipe to fit in twelve-inch O. D. well casing and to extend 120 feet below pump-head base.

State in bid date of delivery, method of oiling the shaft and manufacturer's guarantee.

The city reserves the right to reject any and all bids, and to award the contract as it may deem the best interests of the city.

WM. R. GALT, City Manager.

Attest:

B. H. BRIDGES,

City Auditor and Clerk.

Bids close January 18, 1927.

**Street Signs**

Birmingham, Ala.

Sealed proposals will be received by the undersigned until 10 o'clock A. M. Tuesday, January 18, 1927, for the furnishing of approximately two hundred and fifty (250) complete street signs f. o. b. Birmingham, Alabama.

Street signs to be of the type generally known as New York Type 46-W, as manufactured by the Municipal Street Sign Company, Inc., New York City.

The signs are to be used principally on White Way lighting posts of varying diameter. Details of lighting posts will be furnished upon application. Each sign shall consist of two double-faced plates, or four plates having sign on one side, two being incased back to back in malleable-iron frame.

Each bidder shall submit with his bid detailed specifications and plans of the sign and frame which he proposes to furnish, together with one sample sign.

Each plate shall be approximately 21½ inches long by 11¼ inches high. The size of the letter of the name in the top part of the sign shall be 1¼ inches and the size of the letter in the lower part of the sign shall be 4 inches high. The lettering on the plates must show the names of the street and avenue as designated by the city.

The bidder shall submit with his bid a certified check or bidder's bond on a reliable Surety Company in the amount of five (5%) per cent of the bidding price as a surety that in case of award of contract he will enter into a formal contract for the furnishing of street signs, ready for installation, and furnish approved bond in the amount of one hundred (100%) per cent of the contract price as a surety that he will carry out the conditions of his contract and fulfill the guarantees contained therein.

Detailed information will be furnished upon application to the undersigned.

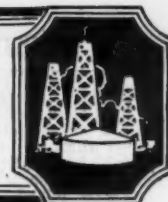
The City of Birmingham reserves the right to reject any or all bids or to accept any bid submitted, even though it may not be the lowest, should it appear to be the most advantageous to the city.

A. J. HAWKINS, City Engineer,  
City of Birmingham.





# CLASSIFIED OPPORTUNITIES



## MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

**BEST MONEY-MAKING PROPERTIES IN SOUTH today.** Alabama—12,500 acres timbered farm and mineral lands. Timber estimate about 13,000,000 feet. Only \$8 per acre. 8000 acres going well-improved Plantation, only \$25. 4600 acres Plantation, some good timber, only \$30 acre. Write H. H. Hansen, Macon, Mississippi.

**HARDWOOD TIMBER LANDS For Sale.** Fourteen thousand acres oak, poplar, chestnut, etc.; extra-fine poplar. An interest donated in large acreage for new industrial sites and town adjoining a fast-growing little city, to secure location of veneering plant, crosscutting plant for chestnut poles, crossties and shop oak; also oak flooring plant and additional furniture and chair factories. Attractive proposition direct from owner. T. B. FINLEY, North Wilkesboro, N. C.

### GRANITE QUARRY

**FOR LEASE OR SALE**—Large developed granite quarry near Atlanta, Georgia, for paving, structural materials and monumental uses. Address Granite, 517 Grant Building, Atlanta, Ga.

### COAL AND TIMBER LAND

**1900 ACRES** good coal land, 10,000,000 feet fine timber, mines and railroad near by; will lease on reasonable terms. D. K. YOUNG and A. F. SANFORD, Clinton, Tenn.

**FOR SALE or trade for income property.** 6000 acres of fine coal land on main line of Norfolk and Western Railway.

JNO. W. DENNIS, Jaeger, W. Va.

**FOR SALE—COAL AND TIMBER LANDS** in McCreary and Pulaski Counties, Kentucky. Approximately 14,000 acres of land, with good titles, covered with oak, poplar and pine timber; also three seams of coal from three to five feet in thickness; mines in operation; accessible to the railroad; making settlement of estate. For particulars write BEN D. SMITH, E. E. BELL, Special Receivers and Commissioners, Somerset, Kentucky.

### IRON ORE AND TIMBER LAND

**FOR SALE IN FEE**—14,000 and 50,000 acre tracts iron ore and timber lands on Chesapeake & Ohio and Norfolk & Western Railways in Alleghany and Craig Counties, Virginia. Box 865, Charleston, W. Va.

## FARM, FRUIT AND TRUCK LANDS

### FLORIDA

**FLORIDA REAL ESTATE SERVICE.** I buy, sell, inspect and report upon real and business properties. Operations state-wide. J. H. BRINSON, Gainesville, Fla.

### A WORD TO THE WISE!

Take advantage of buyers' market in Florida while owners of real estate need money. We offer business and home property, groves and river fronts.

GOODWIN & BAKER,  
Fort Pierce, Florida.

**FLORIDA** produces the menu for America's table, from fruits to nuts; heaviest crops produced in the winter months, bringing highest prices in the frozen Northern markets. Finest winter climate in the United States. Approximately \$15,000,000 in our State Treasury; no bonded indebtedness; no State income or inheritance taxes, ever. We have a factory site, an investment, a home, grove or farm for you. Send today for booklet and list. Tampa-West Coast Realty Co. (Inc.), Opp. Postoffice, "Since Before the War," Tampa, Florida.

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Rate 30 cents per line per insertion. Minimum space accepted, four lines. In estimating the cost allow seven words of ordinary length to a line. *When the advertisement contains a number of long words proper allowance should be made.* Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, oil or mining stock advertisement accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 28c per line; 300 lines, 26c per line; 500 lines or more, 25c per line.

## FARM, FRUIT AND TRUCK LANDS

### FLORIDA

CARR & CARR, INC.,  
WEST PALM BEACH, PALM BEACH,  
LAKE WORTH.

References—Any bank or trust company in Palm Beach County.

### MISSISSIPPI

#### MISSISSIPPI GULF COAST OPPORTUNITIES

A \$70,000,000 construction program is under way. Chicago and other outside capital flowing in. New hotels representing several million dollars being completed. Highways, bridges, railroads, homes under construction. Unusual opportunities for investment or development. Write for interesting details about this fast-growing section.

R. W. KING, Realtor,  
Biloxi, Miss.

### NORTH CAROLINA

If interested  
**FOR HOME OR FOR INVESTMENT**  
In the great and rapidly developing  
STATE OF NORTH CAROLINA,  
especially in its leading city, Charlotte,  
or in a Southern Cotton Mill or Southern  
Mill Stocks, write to

F. C. ABBOTT & CO.,  
Realtors and Investment Bankers.  
Nearly thirty years in Charlotte.

### TEXAS

E. B. WITMER, Realtor,  
First National Bank Building,  
Mercedes, Texas.  
City Property, Farms, Citrus Groves.  
Large Acreage, irrigated and unirrigated.

## BANKRUPT SALE

**BANKRUPT SALE**—Beattie Hosiery Co., Somerset, Ky., January 31, 1926. Complete line of machinery and equipment, comprising knitting machines, loopers, sewing machines, forms, ribbers, winders, presses and all knitting-mill equipment of the inventory value of \$12,710. Stock of merchandise comprising hosiery, finished and unfinished, of the inventory value of \$3540; raw yarns, \$847.02; dyes and chemicals, \$278. All sold at public auction to highest and best bidder. Terms, cash in hand or on six months' time, with bond and approved sureties. Sealed bids marked "Sealed Bids" outside envelope, accompanied by certified check or bond to be approved, to be opened on day of sale accepted. For further information write undersigned Trustee.

W. O. HAYS, Trustee.

## BUSINESS OPPORTUNITIES

**FOR SALE**—In Birmingham, Alabama, one of the best retail lumber yards. Address C. B. RATLIFF, 512 North 21st street, Birmingham, Ala., care of Kendrick Realty Co.

**WANTED**—Experienced party, with capital, to take management of long-established plant manufacturing high-grade millwork and operating lumber yard and builders' supply business in Virginia. Address No. 6666, care Manufacturers Record, Baltimore, Md.

## CANNING PLANT WANTED

**WANTED TO BUY**—A canning plant equipped for canning apples. Address "FRUIT,"  
1249 Peachtree Street, Atlanta, Ga.

## ELECTRIC PLANT WANTED

**WATER, ICE AND ELECTRIC PLANTS WANTED**—Advertiser would be interested in buying water, ice or electric plant in good Southern town of 2000 or over. Address No. 6658, care of Manufacturers Record, Baltimore, Md.

## INVESTIGATIONS—APPRAISALS—REPORTS

**INVESTIGATIONS—APPRAISALS—REPORTS**—On Florida Properties and Industries of all kinds; 25 years' residence and engineering experience in the State. H. E. MEMMINGER, P. O. Box 448, Office Marble Arcade, Lakeland, Fla.

## FINANCIAL

**GOING INDUSTRIAL PLANT** desires loan \$3000 secured by first mortgage; interest 7% per annum. P. O. Box 22, Apalachicola, Florida.

## FACTORY SITES

**INDUSTRIAL PLANT SITE FOR SALE.** We control 22 acres and offer to active, interested parties complete engineering data on the best location obtainable near Richmond, Va., for progressive manufacturing purposes; on deep water and trunk railroad. Wire Edwin Wortham, Consulting Engineer, Grace-American Building, Richmond, Va.

**CONTAINING 25 acres, 700 feet on L. & N. R. R., with spur now in, 20 minutes of Court Square.** Inviting price if taken at once. C. D. McRAE, 84 Madison avenue, MEMPHIS, TENN.

**RICHMOND, VA.**—Factory and warehouse sites, with and without trackage. Workmen and women in good supply and altogether reasonable. Local transportation to all points in and near to the city. Distribution abroad ample; five trunk-line railroads to North, South, East and West. Water transportation direct to New York, with New England connections. Financial aid to sound enterprises.

RICHMOND TRUST CO.,  
Real Estate Department,  
2 South Seventh Street.

## INDUSTRIES WANTED

**WE WANT FACTORIES AT FERNANDINA, FLORIDA.** I own a factory building in this city containing fifteen thousand feet of floor space; for heavy work this is fine, for textile work good, for big-boat works the best. Any boat on the ocean can come to this dock, and any car from any railroad can come to this building. This is no stock-selling proposition, but if you want to establish a good factory here write  
F. W. SADLER, Fernandina, Florida.

## INDUSTRIES WANTED

FLORIDA offers more comfortable working days than any other State in the Union. TAMPA offers better distribution for your product than any city in Florida. HARRIS TERMINALS offer the best location for your warehouse or factory in Tampa.

HARRIS REALTY COMPANY, Realtors, P. O. Box 585, Wallace S. Bldg., Tampa, Fla.

## INDUSTRIAL BUILDINGS

FOR RENT OR SALE—Two-story brick building, 60,000 ft. of floor space, located on Southern Railway; private siding entire length building. Building extends from street to street, entrance both ends. Steam heated, also well lighted. Suitable for manufacturing plant, wholesale storage or can be divided to suit tenants. Write for full particulars. Exposition Realty Co., 200 Commercial Bank Bldg., Charlotte, N. C.

## INDUSTRIAL PLANTS

SPECIAL OFFER—Marine Engine Plant, located on water and Pennsylvania R. R. Nice town. Easy terms, part cash, balance to be taken in special articles easily manufactured; material furnished by us. Opportunity. Quick action. Chesapeake Engine Co., Oxford, Md.

FOR SALE OR RENT—A small Furniture plant to manufacture wood novelties or small work, containing fourteen machines, including a 42-inch triple Drum Sander, a blower system, two motors, 40 horsepower. A live man with \$1500 to \$2500—one who can get orders in good lumber market in a city of over 300,000. Address No. 6663, care of Manufacturers Record, Baltimore, Md.

FOR SALE—MODERN FURNITURE, WOODWORK AND MOULDING FACTORY IN MISSISSIPPI—Just recently completed—a modern and up-to-date factory, suitable for furniture plant, planing mill or moulding and trim factory—consisting of 8 acres. Located in the central part of Mississippi on the I. C. R. R. main tracks, with two switches to easily accommodate 15 to 25 cars. Factory building 100 ft. wide x 250 ft. long, frame construction, concrete floor, with all modern equipment, such as rip saws, cut-off saws, stickers, planers and resaws; 4 new Moore kilns of brick construction, with storage shed adjacent for approximately 1,000,000 ft. of lumber; engine, boiler and fuel room, all of brick, with new 150-horsepower engine and generator, all new equipment; approximately 5000 running feet of tramway, with spaces for stacking lumber 18 to 20 feet high. Would be willing to sell factory separate from lumber yard. If interested in a REAL BARGAIN, write immediately. Address No. 6662, care Manufacturers Record, Baltimore, Md.

## PATENT ATTORNEYS

PATENT-SENSE. "THE BOOK FOR INVENTORS AND MANUFACTURERS."

Free. Write

LACEY & LACEY,

735 F Street, Washington, D. C.

## PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth Street N. W., Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS—Charlotte Office convenient to South. PAUL B. EATON, Registered Patent Attorney, 406 Independence Building, Charlotte, N. C., and 903 Grant Place N. W., Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS—Write for our free Guide Books and "RECORD OF INVENTION BLANK" before disclosing invention. Send model or sketch and description of your invention for our inspection and instructions free. Terms reasonable. Highest references. VICTOR J. EVANS & CO., 712 Ninth, Washington, D. C.

INVENTORS—Send sketch or model of your invention for opinion concerning patentable nature and exact cost of applying for Patent. Book, "How to Obtain a Patent," sent free. Gives information on patent procedure and tells what every inventor should know. Established 25 years. Chand-lee & Chandlee, 412 Seventh St. N. W., Washington, D. C.

## SITUATIONS WANTED

BUSINESS MAN, 36, wide experience in executive capacity, large property owner in Florida, wishes to get in touch with responsible firm desiring representative or desiring to establish industry in Florida. Familiar with local demands and conditions. Address P. O. Box 365, Miami Beach, Florida.

MANUFACTURING MANAGER—Experienced in production, planning, budgeting, valuation, costs; competent mechanical and electrical engineer, available as assistant to executive; eleven years' progressive experience; age 32. Address No. 6667, care of Manufacturers Record, Baltimore, Md.

MECHANICAL ENGINEER and Executive; over 20 years' experience designing, developing, manufacturing and servicing special machinery, varied training in shop and drawing room; technical graduate; member Amer. Soc. of Mech. Engrs.; Maryland or Virginia. Address No. 6659, care Manufacturers Record, Baltimore, Md.

PLANT ENGINEER—15 years' experience plant construction and maintenance. First-class designer modern factory buildings, power plants, mechanical equipment; can handle men and get results. Age 45; married; Amer. citizen; technical education. Best of references. Address No. 6665, care of Manufacturers Record, Baltimore, Md.

EXECUTIVE AND ENGINEER—Civil Engineer, 38, A. S. C. E., 18 years municipal engineering, construction and public-utilities experience, proven executive and manager, accustomed to handling large affairs and used to responsibilities, desires new connection where experience and ability count; available immediately; location immaterial. No. 6664, care of Manufacturers Record.

## SITUATIONS WANTED

EXECUTIVE—Position desired in the South by a mechanical engineer; 17 years' general experience; age 38; 10 years in executive capacities. Capable to handle large forces in manufacturing—sales, construction, accounting, cost. A busy executive or business man wishing to relieve himself of daily responsibilities would find here a capable man. Address No. 6661, care Manufacturers Record, Baltimore, Md.

## MEN WANTED

WANTED—A man experienced in canning apples to take small interest and manage canning plant. Address "Fruit," 1249 Peach-tree street, Atlanta, Georgia.

SALESMAN WANTED—Our proposition offers greater earning possibilities to the real salesman than is offered to him in most any other line. A credit and collection service with a bonded recovery obligation.

American Security Credit Company, General Offices, St. Louis, Mo.

WANTED—Representatives to handle a high-grade oil burner, a burner that will burn any grade of fuel oil from 18-20 gravity and up without smoking or clogging. This burner is operating in many large plants and giving wonderful results.

TUFFLEY UNIVERSAL OIL BURNER, 102 Oxford Street, Syracuse, N. Y.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established sixteen years. Send only name and address for details.

R. W. BIXBY, INC., 103 Downtown Building, Buffalo, New York.

## LUMBER

FOR SALE—1x5, 1x7 and 1x9 No. 2 common Southern Pine Boards. Thoroughly dry and dressed.

CHAS. PHILLIPS, Jr., Griffin, Georgia.

## MACHINERY AND SUPPLIES

ICE-MAKING AND REFRIGERATING MACHINERY—New and rebuilt. Our prices on new Waynesboro Refrigerating equipment, delivered and installed, very low. Buy direct from the manufacturer. All sizes. Get our prices on your requirements. GEISER MANUFACTURING COMPANY, "Department E," Waynesboro, Pa.

## MACHINERY AND SUPPLIES WANTED

WANTED—2 16-inch or 18-inch dredge pumps; prefer good used steam-driven units. W. S. FALLON COMPANY, 326 Union Building, Cleveland, Ohio.



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### For Sale—Complete Tool and Die Shop

Will sell as going concern. 5 year lease. Down town location. Motor driven; modern in every respect; all tools practically new. Price very attractive.

APPLY

Northern Tool & Die Co.  
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MANUFACTURERS RECORD



## Linde delivers the goods

**T**HE prompt delivery of Linde oxygen is possible anywhere in the country because of Linde's 37 plants and 107 warehouses. But Linde believes that "delivering the goods" means much more than getting full cylinders of oxygen to the customer's plant.

"Delivering the goods" also means a good product, and Linde oxygen has been the standard of industry for years.

Furthermore, "delivering the goods" means service—an intelligent effort to help one's

customers in the application of the oxwelding and cutting process. Linde has always realized this and has devoted time, effort and money to the discovery of economical methods for using oxygen. This information is available to Linde customers in booklets, magazines and procedure controls and through the Linde field service men.

**THE LINDE AIR PRODUCTS COMPANY**

*Unit of Union Carbide and Carbon Corporation*

*General Offices: Carbide and Carbon Building*

*30 East 42d Street, New York*

**37 PLANTS . . . . . 107 WAREHOUSES**



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*The White 2½-Ton Truck, with its abundant power and speed is an ideal hauling unit for the road contractor.*

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Road contractors and highway departments of states, counties and townships using thousands of motor trucks have expressed a decided preference for Whites on account of their superior performance records. These records show that both in new construction and in road maintenance White Trucks are perfectly adapted to the severe requirements imposed by this class of work.

More than 5,500 White Trucks are now working efficiently and dependably in road construction and highway maintenance with demonstrated economy of public money.

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Forty-four states and 333 counties operate a total of more than 2900 Whites in their road

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Road builders know trucks. That's why Whites predominate on the most important road building programs in every section of the country.

**THE WHITE COMPANY, *Cleveland***

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